Dental

Abstracts

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Dental Abstracts

A selection of world dental literature

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3. To supply enough data in each abstract and digest that the reader may determine whether he wishes to refer to the original article for more complete information.

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General

The physioprint in research and clinical dentistry

Donald G. Sloan. *Penn D.J.* 62:4:9-11 May 1959

One of the many methods used to study the teeth in relation to the facial complex is the photographic and roentgenographic reproduction of the facial volume in three dimensions by means of the physioprint. Developed by Viken Sassouni, the physioprint gives a third dimension to the two-dimensional photograph. It includes a unit of measure, and depth may be ascertained by the deflection of the vertical lines; when they are bent closer to each other this indicates a greater change in the contour of the face, much as on a geographic contour map.

The physioprint is obtained by the projection of a grid (Fig. 1) on the subject's face, and with this single source of illumination a photograph is taken and becomes the physioprint (Fig. 2). The grid is essentially a 35 mm. slide of ruled lines, similar to graph paper. In a cephalodentofacial analysis there must be the combination of (1) a cephalometric roentgenogram obtained by placing the subject's head in a constant position by means of the projected grid, (2) articulated dental casts, and (3) the physioprint for the study of the external face and its contours. These three elements provide a three-dimensional interpretation.

The technic is simple. A dental chair and headrest are used to position the subject. A 500 watt projector with a 7-inch lens throws the image of the grid on the subject's face. The main horizontal line corresponds to the Frankfort plane, and the main vertical line bisects the mass of the face through the nasal bones. Two 35 mm. cameras are used with 90 mm. lenses placed 3.5 feet from

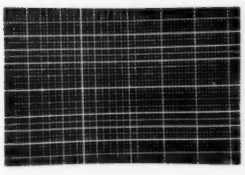

Figure 1 The grid is essentially a slide consisting of ruled lines

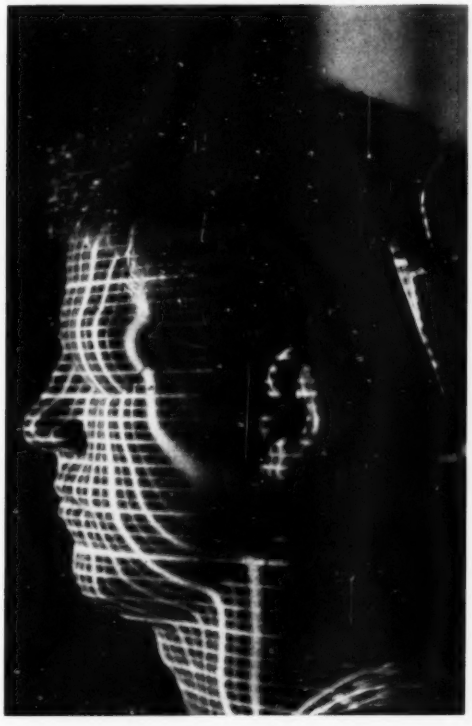

Figure 2 The physioprint is a photograph of a projected grid on a subject's face

the subject, one parallel to the sagittal plane and the other perpendicular to it.

When the grid is used for taking cephalometric roentgenograms, an 8 by 10 inch cassette is placed 4 inches from the patient's sagittal plane and parallel to it. With high-speed film with double screens, an ordinary dental x-ray unit may be used at 65 to 70 kv. (or higher), at about 10 ma. for a two-second or three-second exposure.

Full mouth models may be made and occluded by means of wax bites; or with double thickness baseplate wax an impression is taken of the occlusal surfaces of the teeth, with the jaws in centric occlusion. Later, models are poured in stone and keyed for articulation.

The physioprint may be employed for anthropologic studies to show racial comparisons and growth. Since the physioprint of each individual is unique, it may be employed in the forensic sciences in a system of identification. In orthodontics, the physioprint may be used to study patients before and after treatment, to show growth, and to study other cephalodentofacial problems. In oral surgery, the use of the grid is invaluable in preoperative and postoperative studies of mandibular resection and in measuring facial deformity caused by pathologic processes. Prosthodontists may employ the physioprint in pretreatment and posttreatment studies, or in studies of the temporomandibular joint regarding problems dealing with vertical dimension and freeway space.

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What do Mr. and Mrs. Florida think of you, doctor?

J. Leon Schwartz. *J.Florida D.Soc.* 29:3-5 Winter; 30:6-9 Spring 1959

At the request of the public relations and education committee of the Florida State Dental Society, the market research division of Florida State University made a state-wide survey of a cross section of the white, permanent resident population of Florida. Opinions regarding dentistry were obtained in personal interviews.

Of the Floridians interviewed, the average number of visits to a physician in the past year was 3.3 for women and 1.8 for men, or a combined average of 2.4 visits. The average number of visits to a dentist in the past year was 1.9 for women and 1.4 for men, or a combined average of 1.6 visits. Thirty-nine per cent of the men interviewed, and 35 per cent of the women, had not visited a dentist in the past year; 27 per cent of the Floridians interviewed had not visited a dentist for two years or more. The mean length of time since the last visit to a dentist for all respondents was about 24 months.

In the lower income group (total family income of less than $5,000 a year), only 36 per cent had visited the dentist within the last six months, compared with 48 per cent of the middle income group (from $5,000 through $9,999 a year) and 76 per cent of the upper income respondents ($10,000 and above a year). Similarly, 36 per cent of the lower income group had not visited a dentist for two years or more, compared with 25 per cent of the middle income group and 10 per cent of the upper income group. Thus, more than one in every three persons of lower income, and one in every four of middle income are badly neglecting dental care, whereas only one in ten of the upper income group is this negligent. Expense is a substantial factor in the lack of sufficient dental care.

Although 74 per cent of all respondents had some kind of health and accident or medical expense insurance, less than 9 per cent had policies which covered any kind of dental work.

Only 63 per cent of the lower income respondents had health insurance, compared with 82 per cent of the middle income group and 76 per cent of the upper income group.

Some system of insurance or regular prepayment for dental care would greatly expand the frequency and regularity of dental visits.

When respondents were asked their opinion as to the best system for paying dental bills, 72 per cent answered "by yourself"; 15 per cent of all classes chose "by group insurance"; 7 per cent chose "by your private insurance company." Thus, about 22 per cent of the Floridians interviewed prefer some type of nongovernmental insurance for dental care, even though such coverage is not in use today. Only 4 per cent answered "by the federal government," and only 2 per cent of those interviewed answered "by the organization for which you work."

Twenty-seven per cent of the women interviewed saw their dentist last for a regular checkup, whereas 21 per cent of the men made their last visit for a similar purpose. Twenty-six per cent of the men last visited their dentist because of the need for extractions, whereas 24 per cent of the women were there for a similar reason. The next most important reason for the last visit on the part of both men and women (24 per cent) was to have teeth filled. Extractions, restorations and regular checkups together accounted for 74 per cent of the most recent visits by both sexes. The fourth ranking purpose—cleaning—added another 11 per cent, leaving just over 15 per cent for all other purposes.

Florida dentists rate high with both their men and women patients. In response to the question, "The last time you went to a dentist, what, if anything, did you dislike about his methods?" 87 per cent of those interviewed said, "nothing." The allied objections of "painfulness" and "roughness" were cited by 4.8 per cent of all respondents.

In response to the question, "The last time you went to a dentist, what, if anything, did you particularly like about his methods?" 22 per cent of all respondents were impressed with the personality, good manners and consideration for the patient; 17 per cent of the men and 9.7 per cent of the women were impressed with the dentist's skill and competence; 13 per cent of the women and 3.8 per cent of the men were impressed with the dentist's gentleness.

Eighty-four per cent of all respondents said that the attitude of the dentist's receptionist was friendly and cooperative.

201 West Platt Street, Tampa, Fla.

The federal narcotics law in relation to the practice of dentistry

Ernest M. Gentry. *D.Asst.* 28:15-18 Jan.-Feb. 1959

The Harrison Narcotic Law is designed to direct the manufacture and distribution of narcotic drugs through medical channels to consumption for medical purposes only. A dentist or other practitioner who intends to administer or dispense narcotic drugs must apply for registration under the Harrison Law with the district Director of Internal Revenue, and must pay the occupational tax. To be eligible for such registration, the dentist must be lawfully entitled, under the laws of the state, territory or district wherein he practices, to dispense narcotic drugs to patients whom he attends professionally.

On approval of his application, the dentist is assigned a registry number and issued a tax stamp in Class IV as a practitioner. The tax stamp must be posted conspicuously in the dental office.

A dentist may secure narcotic drugs for direct dispensing or administration to patients only on official order forms. He may not obtain narcotic drugs on a so-called prescription for general office use. Official order forms are obtainable from the Director of Internal Revenue in a book, containing ten sets of forms, for ten cents. The form is to be prepared in triplicate and signed by the dentist; the original and triplicate, with the intervening carbon sheets, are forwarded to a qualified manufacturer or wholesaler; the duplicate is retained by the dentist for two years and is subject to inspection by a federal or state narcotic officer.

A prescription for narcotic drugs must bear the date when issued and the full name and registry number of the dentist. The refilling of a prescription for taxable narcotic drugs is prohibited.

A dentist may not use his prescription form to obtain narcotic drugs for general office practice. Drugs for such use are obtainable on official order forms, as hitherto described, from a qualified manufacturer or wholesaler.

When the name of a fictitious patient is discovered on a narcotic drug prescription filed with a druggist, usually it indicates willful catering to drug addiction. The law does not permit the use of a fictitious name on a drug prescription.

The supplying of narcotic drugs pursuant to telephoned advice of the practitioner is prohibited, whether or not signed prescriptions covering such orders are subsequently received; but in an emergency, a druggist through his agent may deliver narcotic drugs pursuant to a telephone order, provided the agent is supplied with a signed prescription before delivery is made.

A druggist may fill an oral prescription communicated to him by a registered practitioner for such narcotic drugs or their compounds which the

Commissioner of Narcotics has found by regulations and designated to possess little or no addiction liability.

A practitioner's prescription blanks should be safeguarded and never left where drug addicts may have the opportunity to take them. The order forms of a dentist likewise should be safeguarded. If unused order forms are lost or stolen, a report should be made at once to the Commissioner of Narcotics, giving the serial numbers of the forms. Thefts of narcotic stock should be reported immediately to local law enforcement authorities and a statement filed with the district narcotic supervisor.

U. S. Bureau of Narcotics, Dallas, Texas

Distribution and selected characteristics of licensed dentists in Missouri

Edward Hassinger, Robert L. McNamara and Ryland M. Ayres. *J.Missouri D.A.* 39:9-13 May 1959

This report summarizes information obtained from a card enclosed with the license renewal notice sent to each of 2,395 licensed dentists in Missouri in 1958; 2,218 cards (93 per cent) were returned. Of the cards returned, 208 were from men in the armed services, 73 were from dentists who had retired from practice, 38 were from licensed dentists who were neither engaged in practice nor retired, and 22 were from dentists who did not report the extent of their practice.

Of the 1,876 licensed civilian dentists, 1,647 reported a full-time practice and 229 a part-time practice. Of those in part-time practice, 201 had no other occupation, suggesting that part-time practice is a step toward retirement.

Sixty-four per cent of the dentists practicing in Missouri were born in that state, 22 per cent were born in states adjacent to Missouri and 13 per cent were from states more distant.

Ninety-three per cent of the dentists practicing in Missouri were graduated from dental colleges in Missouri; about 5 per cent were graduated from dental colleges in adjacent states, and 2 per cent were graduated from dental colleges farther away.

Eighty-one per cent of the practicing dentists were under 65 years of age, 6 per cent were 75 years old or older. Part-time dentists were concentrated in the older age groups; 52 per cent of the 229 part-time dentists were 65 years old or older, as contrasted to 14 per cent of the full-time dentists.

Ninety-seven per cent of the 1,876 licensed civilian dentists had an exclusively private practice; only 13 dentists reported that they were employed by industry. Nine per cent of the practicing dentists reported being engaged exclusively in a specialty.

In 1958, 70 per cent of the practicing dentists were located in the six counties and St. Louis City which, in 1950, had 52 per cent of the state's total population.

Younger dentists were not as likely to be located in the largest cities (St. Louis and Kansas City) as were dentists in the middle years. The age grouping of 45 to 54 years old had the highest proportion of its members in the two largest cities. Dentists in the older age grouping were more likely to be in the smallest centers; 17 per cent of those 65 to 75 years old, and 27 per cent of those 75 years old or older were in places with a population of less than 2,500.

The 163 dental specialists classified themselves as follows: orthodontist, 62; oral surgeon, 42; prosthodontist, 20; pedodontist, 18; periodontist, 7; endodontist, 3; roentgenologist, 3; public health, 5, and a combination of two specialties, 3. About 92 per cent of the dentists engaged exclusively in a specialty practiced in the standard metropolitan counties.

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Ultrasonics and headaches

J.A.M.A. 169:419 Jan. 24, 1959

Q.—This problem concerns the cause of headaches and emotional irritability in a group of men working in a large aluminum plant. In this plant, ultrasonic waves are used to detect structural defects. A frequency of from 200 kilocycles to 25 megacycles is employed. The operator of the ultrasonic machine has to look constantly at a cathode ray oscilloscope for about eight hours. All in this group have complained of chronic headaches and increased emotional irritability. They

believe that ultrasonic waves are the causative factors. Although the men are not in the direct line of the sound waves, they are required to clean the sound transducer. No authoritative reports have been seen which will help in determining whether the ultrasonic waves may be etiological factors in producing these symptoms. Could peering at an oscilloscope screen for an extended period of time be the causative factor?

A.—This is an interesting question. Many similar inquiries have been received regarding ultrasonics, although the symptomatology allegedly due to ultrasonic waves has been different in some of the instances. Present beliefs are that ultrasonics will not have any untoward effect. Some difficulty has been found, however, in medical and dental use of ultrasonics. This effect (heat) is on the local tissue through direct contact with ultrasonic waves by way of fluid mediums. In these instances, wearing gloves seems to furnish adequate protection to prevent any significant injury. The inquirer, however, has put his finger on the problem by reference to the oscilloscope (which in effect is a radar screen). Gazing for long hours may produce headaches and, as a result, nervous irritability. There is no evidence available that will support the claim that these symptoms are caused by exposure to ultrasonics. Some other factors must be responsible.

535 North Dearborn Street, Chicago 10, Ill.

The effect of age on taste sensitivity

R. M. Cooper, I. Bilash and John P. Zubek. *J.Gerontol.* 14:56-58 Jan. 1959

One hundred subjects ranging in age from 15 to 89 years were used in a study of the effect of age on taste sensitivity to the four primary taste qualities of sweet, sour, salty and bitter. A sipping technic was used wherein the blindfolded subject was presented with two 20 cc. beakers, one containing distilled water and the other a "taste" solution of a low concentration. The concentration of the solution in the second beaker was increased until the subject reported that it tasted different from the distilled water, this value being called a "taste threshold."

The curve of development and decline for sensitivity to each of the four primary tastes was essentially the same. All curves showed a noticeable decline after the late fifties. Neither sex nor the habit of smoking seemed to make any difference in taste sensitivity. Sensitivity to sour may be less affected by age than the other taste qualities.

The decreasing sensitivity to taste with age probably is due to degenerative changes in the taste receptors.

University of Manitoba, Winnipeg, Manitoba, Canada

More clinical research with dental materials needed

Björn Hedegard. *Northwest.Univ.Bul.* 59:35 Spring 1959

Today dental materials are the subject of an important and fast-growing science important to the future of the dental profession. With few exceptions, most dental material studies, so far, have been made in the laboratory. Some of the laboratory studies are difficult to evaluate because of the lack of accompanying clinical research. Many factors about mouth conditions are still unknown and, therefore, are impossible to reproduce in the laboratory.

The acrylic denture base, for instance, undergoes dimensional changes when processed. The resulting discrepancy in fit between the finished base and the denture-bearing tissue area may or may not have an injurious effect on the mucosa and underlying tissue. What is the clinical tolerance? The biological tolerance? Does the denture base undergo other dimensional changes while being worn in the mouth? If so, what effect do these changes have on the tissues? Many more questions of the same type await answers.

Questions like these can be answered only through clinical research. Such studies are just as important as laboratory studies, in order to evaluate the usefulness of dental materials. Laboratory and clinical research with dental materials should go hand in hand.

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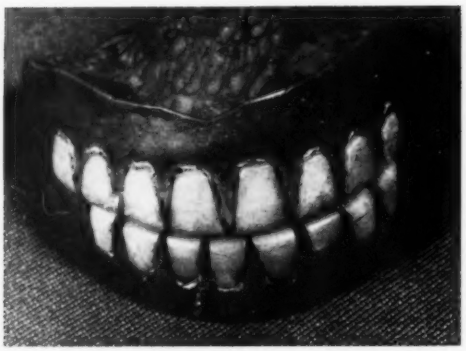


Figure 1 Denture made of beechwood and ivory. Japanese carving, approximately 1700 A.D.

Figure 2 Denture carved entirely out of ivory, approximately 1750 A.D.

Prosthetic dentistry

History of prosthetic dentistry: II

Gernot Rath. *CIBA Symp.* 6:9-18 June 1958

Few references to dental subjects are to be found in medieval literature. It is known, however, that artificial teeth were used in the Arabian countries. Abulcasis, an Arabian medical writer of the twelfth century, reported that he inserted animal teeth in the mouths of some patients and fixed them in place by fastening them to the remaining teeth.

Guy de Chaliac, the most eminent medical writer of the Middle Ages, made a few superficial references to the use of artificial teeth in his book, *Chirurgia Magna* (1363).

There is little doubt that artificial teeth—at least those fastened with wires—were in fairly widespread use. The techniques employed probably followed the lines described by Johann Jessenius von Jessen (1566-1621), professor of medicine of the University of Wittenberg, Germany, who wrote several books in which medieval dental procedures were mentioned. A piece of ivory, carefully carved to simulate the lost tooth, was placed in the alveolus and fastened to the neighboring tooth with gold wire. This procedure, however, required frequent renewals. If the inserted artificial teeth remained intact for three months, the treatment was considered a success.

A short time later, several artificial teeth were combined in a unit resembling a bridge, and attempts were made to construct complete dentures in a similar manner. A set of complete dentures was found in a Swiss tomb (approximately 1500 A.D.), which had been carved from the femur of an ox. A spring made of tin wire connected the upper to the lower denture. From the dental, medical and esthetic points of view, the dentures produced toward the end of the Middle Ages were unsatisfactory. According to a French writer of the sixteenth century, these types of dentures were removed at the table and reinserted after the meal.

Soon after the end of the Middle Ages, a corporation was founded in Paris which produced ivory dentures. These *tabletiers et remetteurs de dents d'ivoire* were not accepted by members of the royal court. Louis XIV, according to contemporary reports, had numerous teeth missing and several carious stumps remained untreated in his mouth. His personal physician, Pierre Dionis, produced usable artificial teeth made from a paste, the prescription of which was given by Jacques Guillemeau in 1598. This paste consisted of white wax, the resin of the olive tree, mastic, white coral

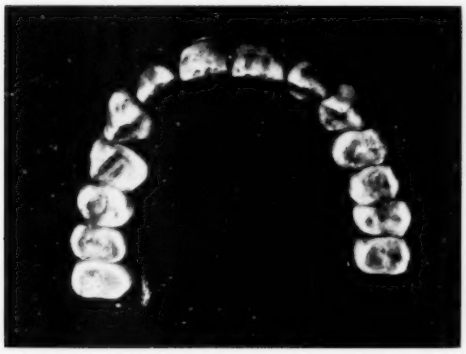


Figure 3 Denture with human teeth, late eighteenth century

Figure 4 Dubois de Chemant's porcelain teeth, called "coffee beans"

and pulverized pearls. Guillemeau's paste, preceding porcelain in prosthetic dentistry, was also used for filling tooth cavities.

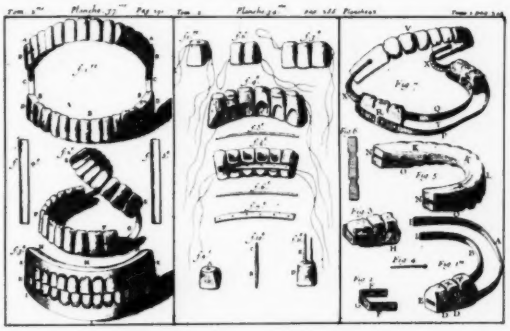
Teeth and bones of several animal species as well as ivory were used for prosthodontic purposes in ancient times; the seventeenth century saw the introduction of hippopotamus teeth. Anton Nuck, a Dutch dentist, recommended these teeth highly because "a hippopotamus tooth remains permanently shining white in contrast to other types of false teeth which undergo rapid discoloration and decomposition under the influence of saliva and food particles. After the insertion of false teeth made of animal bones or teeth, the patient senses a peculiar smell and a taste which soon become unbearable."

Dentists soon realized that human teeth function much better as tooth replacements, and they resorted to the use of this material which—surprising as it may seem—had been neglected for such a long time. Insertion of human teeth became the most popular method in prosthetic dentistry of the eighteenth century. The necessary material could be acquired easily from living persons. The poor sold their healthy teeth to the rich, and servants were often forced to give their teeth to their lords and masters without receiving any compensation.

Transplantation and replantation of teeth were commonly practiced in the eighteenth century. If we are to believe contemporary reports, tooth transplantations proved successful in many instances.

Many dentists kept a selection of extracted human teeth ready for use. Teeth without roots were used and served comparatively well in bridge and denture construction. Easier to obtain and cheaper were teeth from corpses. At the end of the seventeenth century, human teeth had become a valued item of general commerce. Even after the introduction of porcelain to prosthetic dentistry, human teeth remained a popular material for tooth replacement, and several authors, even toward the middle of the nineteenth century, continued to recommend the use of human teeth for denture construction "because they are the best substitute for lost teeth, and porcelain teeth should only be used on account of their cheapness."

Figure 5 Fauchard's dentures and bridges. Left: complete dentures. Center: partial dentures. Right: partial dentures and bridges



With the appearance of Pierre Fauchard's work *Chirurgien Dentiste* (1728), modern dentistry may be said to have begun. Where dentistry had previously been regarded as a somewhat paltry trade, a subordinate profession within the control of surgeons and one which frequently was practiced by charlatans, Fauchard raised dentistry to the status of a science. In every domain, especially in that of prosthetic dentistry, Fauchard stimulated development and progress, and the achievements of the ancient dental artists were not only equaled but soon surpassed. Fauchard solved the problem of fastening dentures in edentulous mouths by constructing complete dentures with spring attachments which he called *râteliers.*

Fauchard was able to produce—from the limited materials at his disposal—a complete row of teeth suitable for practically any jaw, uniting the two dentures with springs, the ends of which replaced the third molars, and thanks to the spring's tension the denture sat firmly in the mouth.

With the eighteenth century came the introduction of pin teeth and crowns to prosthetic dentistry. These restorations usually were fixed to the roots of carious incisors or cuspids with gold pins or pivots. The root canals were widened with a steel bur, and the pin of the crown inserted. Numerous variations of this method were described by contemporary writers.

The advances in prosthetic dentistry during the eighteenth century were achieved without the use of wax or any other molding material. Impression taking had been described by Philipp Pfaff (1756), but this method was not adopted by the dental profession until the beginning of the nineteenth century.

Duchâteau's attempt to introduce porcelain teeth to prosthetic dentistry (1776) passed by almost unnoticed. Dubois de Chemant later "brushed up" Duchâteau's technic and advertised it as his own discovery, the *dents incorruptibles.*

The advances achieved by modern prosthetic dentistry should not lead to the error of disparaging the methods devised by dental artists of the earlier centuries. These craftsmen of the ancient times and these surgeons of the Middle Ages strove to do everything in their power to help their patients. Neither they nor all of present day practitioners have taken such a selfless attitude as Guttman, a dentist in Leipzig, who wrote in 1827: "In order to render the use of artificial teeth more widespread and more serviceable, I will refuse to accept a fee for inserting dentures until my patients have sufficient time to convince themselves of their suitability for clearer enunciation, better mastication and improved esthetic appearance."

Institute of Medical History, University of Bonn, Germany

'Denture stomatitis,' a dental as well as a medical problem

Werner Reither. *München.med.Wschr.* 101:606-617 April 3, 1959

Although the wearing of dentures occasionally affects the oral mucosa in various ways, an inflamed, painful, red and swollen mucous membrane and the appearance of multiple nodules and papillary lesions on the palate—often blamed on the dentures—may be caused by an internal disease. It is recommended that in all instances of denture sores the dentist consult an internist.

Examination by an internist may reveal the presence of achylia gastrica or other diseases of the gastrointestinal tract of which the patients are not aware; they seek dental advice only because the symptoms occur in the mouth.

The majority of patients complaining of denture sores are women over 40 years old. In most instances a gynecologic examination will reveal that it is not the fit of the denture or an allergic reaction to the denture material but an endocrine disturbance or a hormonal deficiency that is either the cause or the predisposing factor in the condition. Hormonal therapy, based on the cytologic findings, usually obtains improvement and cure.

If allergic reactions to the denture material or the coloring matter are suspected, patch tests on the skin and mucosal contact tests should be made.

Dentists and physicians should be aware that certain antiseptics in mouthwashes and tooth pastes, excess mercury in amalgam fillings, antibiotics, or many other drugs may cause similar symptoms in the oral cavity.

Only after all possible causative and predisposing factors have been investigated and elimi-

nated should the dentist replace seemingly well-fitting dentures.

Clinical experience has shown that several patients treated for assumed denture sores were eventually cured when the internal disturbances which had caused the oral symptoms were treated. If these causes were not eliminated early and adequately, the painful mucosal ulcerations epithelized, the inflammatory cells diminished, the polymorphonuclear leukocytes disappeared and severe fibroblastic reactions occurred despite denture replacement and improved oral hygiene.

Even in instances in which inadequately fitting dentures had been inserted, the oral symptoms could have been produced by mycotic infections of the oral mucosa or by diseases which could hardly be recognized in routine examinations. Cooperation between the dentist and the patient's physician and—if required—the medical specialist, is of greatest importance in the treatment of patients with denture sores.

Goethestrasse 70, Munich 15, Germany

The role of the precision attachment partial denture in restorative dentistry

Charles Duane Cory. *J.California D.A.& Nevada D.Soc.* 35:86-90 April 1959

Of the three methods employed in restoring a partially edentulous mouth to a healthy, functioning state, the fixed bridge provides the greatest stability to the abutment teeth. The fixed bridge always should be used except when contraindicated by the number of missing teeth or a generalized unhealthy condition of any abutment teeth and their supporting tissues. The removable clasp partial denture, although most commonly used by dentists, also results in the greatest number of restorative failures. This is because it is virtually impossible to construct a multiple clasp partial denture and have equalized reciprocal action of all clasps. The restoration of choice, when the fixed bridge is not indicated, is the partial denture with precision attachments. This denture should be designed so that the vertical stress is directed primarily along the long axis of the abutment teeth, the lateral stress distributed to all the abutment teeth, and all stresses distributed to the entire appliance in such a manner as to aid the abutment teeth in mutual support of each other; in other words, the denture acts as a splint.

Retention is obtained by using frictional devices known as precision attachments, each consisting of a key and a keyway. The key is shaped somewhat like a T and is soldered to the partial denture. The keyway—the sleeve or box into which the key fits—is soldered into the tooth restoration of each abutment tooth. All attachments must be parallel with each other and with the path of insertion of the denture.

The masticatory apparatus should be evaluated before construction of the denture is started. This involves a study of the occlusal relationship, a determination of the physiologic tolerance of the teeth and their investing tissues, and the treatment of any mobile teeth. The abutment teeth should be surveyed so that the correct position and form of preparation to be made for each abutment, and the path of insertion of the denture, may be determined. The preferred abutment is a three-quarter or a full cast crown, usually with a veneer facing of acrylic resin or baked porcelain.

The removable denture with precision attachments has the following advantages over the removable denture with multiple clasps:

1. It is more sanitary, and normal tooth contour is retained or restored.

2. There are no clasps to cause caries, abrasion and erosion of the abutment teeth.

3. Because of the multiple splinting effect and the fact that the frictional retention is within the normal tooth contour and is in function only during use, the restoration has a longer life and is more comfortable.

4. The rest or stop lies near the gingiva, within the normal contour of the tooth, and stress is along the long axis of the tooth.

5. The esthetic effect is good.

6. The denture can be adjusted easily to any degree of tightness without causing stress on the abutment teeth.

7. The partial denture with precision attachments may be used in many instances where otherwise a complete denture would be the only satisfactory restoration.

25 East Washington Street, Chicago, Ill.

Periodontics

Why eliminate periodontal pockets?

Raoul H. Blanquié. *Parodontol.,Zürich* 13:9-13 April 1959

In the symptomatic treatment of periodontal disease most periodontists agree that the elimination of the periodontal pocket is the primary objective. This apparent uniformity of thought is justified not only in theory but in practice.

Four decades of clinical experience have proved that a physiologic closure of the periodontal pocket is a rare phenomenon and is of minimal value in routine practice. Unless there is a regeneration of the alveolar bone, the apparent elimination of the pocket would be of short duration. The instances in which repair of the crestal bone has been reported include intraosseous and vertical loss types which constitute the minority of periodontal disturbances.

No new technics have been developed to justify the belief that elimination of periodontal pockets through physiologic closure is possible in routine practice.

Edgar Coolidge (1938) stated, that the purpose of periodontal treatment is to eliminate the pocket and check its progress to prevent its spread to deeper tissues, in order that the teeth may remain in function as long as possible without any harmful influence on general health or local structures. This opinion still should be considered the optimum in present-day periodontics.

If a periodontal pocket is not properly eliminated, the retrogressive alterations within the periodontium, regardless of their inciting factors, will be accompanied by infective processes. An unchecked pocket will continue to progress apically until all healthy structures in its path are destroyed. After a pocket is established, a vicious circle has been inaugurated which promotes the development of periodontal disease.

The elimination of the pocket must obtain the re-establishment of the gingival crevice to a normal depth, if possible to zero. From the physical standpoint, the elimination of the pocket is essential to reduce the hazard of reinfection. Not only the removal of all pathologic tissues but the resurgence of a healthy gingival crevice are the most valuable features of periodontal treatment. If this ideal condition of the gingival crevice is established, it can be maintained through adequate preventive procedures and oral hygiene.

In deep pockets, where the extension of pathologic changes projects into contiguous structures, the danger of leaving areas of chronic inflammatory tissue is always present.

The loss of teeth is a serious matter but secondary in importance to factors which are capable of affecting the entire organism. Periodontal disease overshadows all other forms of oral infection in incidence and severity.

The periodontal pocket with its proximity to the oral flora offers an ideal nidus for bacterial incubation and propagation. An intimate relation exists between the pocket and bacterial exudates from lesions within the gastrointestinal and respiratory tracts. The thorough elimination of the pocket, therefore, affords the maximum insurance against reinfection.

Periodontal disease, as an active or a potential focus of infection, must be considered as a serious menace to general health, and all infective processes must be removed to ensure a return of all supporting tissues to a state of health and function.

1624 Franklin St., Oakland, Calif.

The microhardness of roots of teeth with periodontal disease

R. D. Emslie and M. V. Stack. *D.Practitioner* 9:101-103 Dec. 1958

Riffle (1951, 1954) reported that the cervical region of the roots of teeth which had been extracted because of periodontal disease could be curetted more readily than the same region in control teeth. A study was undertaken to determine the microhardness of roots of teeth with and without periodontal disease.

Sections about 1 mm. thick were cut from the cervical region of eight roots from teeth in each group, and similar sections were taken from an-

other collection of nine "periodontal" and nine "control" teeth. All specimens were examined with a G.K.N. Microhardness Tester. The mean microhardness number for the periodontal group was 67.1, and for the control group, 70.9. The difference between the groups is significant statistically. From these results it appears that the dentin of the cervical region of the roots of teeth which have been surrounded by periodontal pockets is softer. However, the reduction in microhardness is greater in the inner than in the outer dentin.

Guy's Hospital Dental School, London Bridge S.E.1, England

A clinical evaluation of an oxygenating agent: preliminary report

Alvin D. Senter. *Oral Surg.,Oral Med. & Oral Path.* 12:320-324 March 1959

A new proprietary oxygenating agent, Amosan, recently has been distributed to many dentists, along with claims regarding its efficacy as an aid in the management of various types of periodontal disease. This preliminary study was undertaken to evaluate the product.

The agent studied consists of sodium peroxyborate monohydrate 70 per cent, buffered with anhydrous sodium bitartrate 30 per cent and flavored with menthol and oil of peppermint. It is packaged in individual units of 1.7 Gm. Each patient was instructed to dissolve the contents of one package in about one tablespoonful of water and to use this as a mouth rinse for 90 seconds at a time. The agent was used three times a day, each time after brushing the teeth.

In the first study 42 patients with periodontal disease were issued a supply of the labeled proprietary preparation. Positive results were observed in 19 of 23 patients with periodontitis; 4 of 5 patients in whom the control of postsurgical healing and of hemorrhage was obtained; 3 of 3 patients with necrotizing ulcerative gingivitis in from one to four days; and in 4 of 9 patients with gingivitis. In 2 patients with chronic necrotizing gingivitis the response was negative. Thus, positive results were obtained in 30 of 42 patients (71 per cent). No allergic reactions were noted, but three patients manifested a burning sensation with tissue congestion; however, this was temporary and did not persist after use of the agent was discontinued.

In the second study, the double blind technic was used; the control was flavored, buffered sodium bicarbonate. This gave positive results in 10 of 20 patients (50 per cent), with no evidence of irritation or other side reactions. The buffered sodium peroxyborate monohydrate gave positive results in 22 of 28 patients (79 per cent). One patient showed severe irritation with small ulcers on the marginal gingiva, and two patients experienced mild burning sensations.

Consolidating the results of the two studies, positive results with the oxygenating agent were obtained in 52 of 70 patients (74 per cent). Untoward side reactions of a temporary nature were found in 6 of the 70 patients (8 per cent).

On the basis of this preliminary study, the product is moderately effective as an adjuvant to periodontal therapy.

School of Dentistry, University of California, San Francisco, Calif.

Periodontics and gerontology

J. Franke. *Parodontopathies* 15:12-18 July 7-12, 1958

In aging and aged patients even with obvious symptoms of periodontal disease, treatment should not be initiated without consultation with a gerontologist. Scientific considerations of the clinical, biologic, histologic and sociologic aspects of the problems associated with senescence are necessary to determine whether the pathologic changes occurring in the periodontal tissue of an aging or aged patient had been produced by endocrine, psychologic or physiologic factors.

Because the periodontium is a part of the entire human organism, it often has been assumed that the aging processes must produce similar changes in the periodontal membrane, the gingiva, the cementum, the pericementum or the alveolar bone as in other parts of the body. Biologic research, however, does not confirm such an assumption.

Delayed healing of wounds in the periodontal tissue of aged patients can be associated with the decreased power of tissue proliferation, and this

delay in healing often contributes to atrophic phenomena occurring in the osseous tissue of the oral cavity.

Unquestionably, in aged persons the tendency to develop inflammatory processes is decreased. This fact is confirmed by the rareness of inflammatory periodontal disease during senescence.

Periodontal disease occurring in aged patients may be caused by two contributing factors: (1) colloidal condensation, and (2) tissue desiccation.

Symptoms of senescence of the periodontium such as narrowing of the periodontal spaces, increase in fibrillation and changes in vessels and cancellous bones must be considered as inherent phenomena of aging and not as inherent pathologic symptoms of periodontal disease as long as the degree of severity does not exceed that found elsewhere in the aging human organism.

Weimarerstrasse 8, Kiel-Wik, Germany

Nutritional aspects of periodontal disease

Joseph C. Muhler. *Parodontopathies*
15:33-37 July 1958

It has been the practice of many dentists to treat periodontal disease by supplementing the patient's diet with minerals, vitamin B complex and vitamin C. Such procedure, however, shows little or no concern as to the real cause for nutritional inadequacy.

The relations between nutrition and periodontal disease are as yet not clearly defined, and it is often possible to demonstrate that a periodontal condition has not been caused primarily by nutritional deficiencies but by local physical factors.

The importance of an adequate nutrition in maintaining healthy investing and supporting tissues should not be minimized. Adequate nutrition prevents a lowering of the tissue resistance.

In 1946, a clinical report from the Royal Canadian Air Force indicated that inflammation of the gingiva was frequently found in apparently healthy young men and that administration of comparatively large amounts of vitamins A, B complex, C and D for a period of five months had no clinical effect on pre-existing inflammation of the gingiva.

Many nutritional deficiencies have been said to be involved in inducing periodontal disease. Protein deficiency may promote periodontal disease. The result of protein deprivation, however, is a severely reduced tissue resistance to infection, impaired healing and thereby a secondary factor in development of periodontal disease.

The role of dietary fat in preventing periodontal disease deserves much more consideration than it has received in the past. Fats are related to the normal metabolism of certain essential minerals, and this relationship should be considered in the etiology of periodontal disease.

Periodontal disturbances have been produced in experimental animals by a diet too low in calcium and phosphorus or by a diet deficient in vitamin D. Severe disintegration of the osseous tissues in the oral cavity is easy to produce experimentally. An indication of similar effects in patients has been demonstrated by a recent study which proved statistically a significant inverse correlation between calcium intake and the degree of periodontal disease; the lower the calcium intake, the greater was the degree of periodontal disease.

There have been only limited clinical or experimental studies dealing with the effect of stress on the periodontal tissues. Because changes of the general adaptation syndrome are mediated by the adrenocorticotropic hormone of the anterior pituitary gland and by other adrenocortical hormones, investigations of the effect of these hormones on the tissues of the periodontium or on the osseous tissue in general would be valuable.

Almost all reports dealing with the etiology of acute necrotizing gingivitis refer to emotional factors. A study by Goldberg, Ambinder, Cooper and Abrams (1956) considers the possible importance of "acute emotional stress" and certain personality variables in the development of periodontal disease.

Recent clinical studies on improvements in wound healing by an enzyme therapy (depolymerases of streptodornase) proved that faster healing has occurred in the experimental than in the control group.

Much more research, however, is needed to clarify the relations between nutritional factors and periodontal disease; the preliminary studies indicate an interesting area for future research.

Indiana University, Department of Chemistry, Bloomington, Ind.

Roentgenology

Tank development of intra-oral radiographs

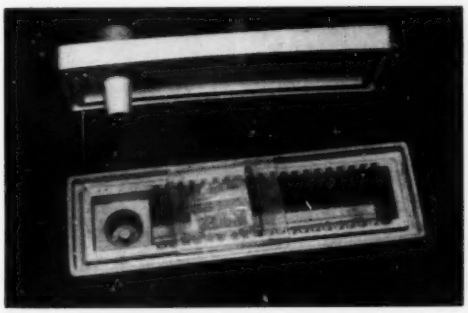
Clifton I. Walter. *Brit.D.J.* 106:28 Jan. 6, 1959

A tank designed for quick development of x-ray films can be used anywhere, even in daylight. The tank holds up to 20 films, which may be in predetermined order, in vertical slots. At one end of the tank lid is a filler cap, and at the other end a simple drain. A loader, which slides above the slots, allows the films to be dropped into place accurately; each film when in place positions the loader for the next film.

When the films are in position in their vertical slots and the lid is on the tank, the developer is poured in and left for the appropriate time. Then it is drained away and water poured in for rinsing. The water is drained away and replaced by fixer. When the fixing is complete, the tank is opened and the films washed while in it.

The tank is economical in use as it contains only 8 oz. of fluid, which can be poured back into a bottle immediately after use. The tank is sold by Bashford Hill Co., Ltd., Rear 44, Gloucester Road, Croydon, England.

82 Addiscombe Road, East Croydon, Surrey, England



The tank, showing the grooved lid, the slots for the films and the sliding loader

Roentgenotherapy of melanocarcinoma in the maxillofacial region

Francesco Santagati. *Radiol.med.,Torino* 43:337-347 Sept. 1958

Thirty-eight patients with melanocarcinoma in the maxillofacial region were treated from 1947 to 1957 at the Radiological Institute of the University of Milan, Italy.

The first group consisted of 14 patients with melanomas attributed to epithelial origin. They were treated by roentgenotherapy alone; of these, nine appeared "cured" after a follow-up period varying from one to five years; two were not followed, and three showed evidence of metastases or recurrence from one to three years postoperatively.

The second group consisted of three patients with melanoblastosis. They were treated by radical surgery only. Evidence of recurrence at the original sites (at the posterior surface of the condyles) necessitated subsequent roentgenotherapy which resulted in "cure" in two patients in whom no metastases developed after a follow-up period of six years.

The third group consisted of seven patients treated with radium rays alone. Although the tumors, made up of melanoblasts, were somewhat more advanced than those in the other groups, only one instance of metastasis occurred. Four patients appeared "cured" after a follow-up period of from 14 months to more than 3 years.

The fourth group consisted of 14 patients with melanocarcinoma (suspected of being metastatic) who were treated by radical surgery with subsequent application of radium. In this group, four patients showed postoperative metastases. Of the 14 patients, six were well after a follow-up period of less than 3 years, and others showed recurrence or were unavailable for follow-up examinations.

The results obtained at the Institute suggest that roentgenotherapy alone can be employed successfully in the treatment of orofacial melanocarcinoma, and that radical surgery should be attempted only when irradiation fails or is contraindicated.

Radiological Institute, University of Milan, Italy

Public health dentistry

Mobile pedodontic clinics in the East German Democratic Republic

Gerd Weins. *Deut.Stomat.* 8:739-745 Dec. 1958

The government of the East German Democratic Republic in 1957 initiated a unique dental health program designed to provide adequate care for the dental needs of preschool and school children in the districts lacking private dental offices and school dental clinics.

A fleet of mobile pedodontic clinics was put into service, and one of those was presented to the Polyclinic of the Hospital in Bitterfeld.

This "dentomobile" meets the specific needs of an efficient pedodontic practice; by overcoming the obvious lack of space, it compares favorably with the office of a general practitioner. In designing the mobile clinic, consideration was given to function, economy and comfort. The operatory is separated from the reception room and the working areas of the dental assistant and the hygienist by plastic curtains. There is ample space for working tables, benches, niches, shelves and closets. The clinic is well equipped and carries a sufficient supply of dental materials and drugs, instruments and apparatus, including roentgenographic, orthodontic and surgical appliances.

Since the introduction of this clinic, 88 per cent of the preschool and school children in the district of Bitterfeld requiring dental care have been treated at the movable clinic. The other 12 per cent received treatment either at private dental offices or school dental clinics in the city. The periodic correction of the accumulated dental defects and maintenance of dental and oral health were provided by the staff of the clinic, and orthodontic and endodontic treatments were given whenever the time arranged for a visit to a certain rural community permitted such procedures. Sometimes the treatment is completed at a subsequent visit of the mobile clinic. This dental health program already has raised the level of dental health in the district of Bitterfeld; in the near future, older children and adults will be treated.

The personnel of the mobile clinic performs an efficient appointment scheduling according to the number of preschool and school children of the community visited. Recall procedures are used to enable the dentist to arrange checkup appointments in advance of the next visit. The staff of the mobile clinic conducts also dental health education courses, presents lectures and films on dental topics in all larger communities of the district of Bitterfeld.

Every child in the Republic should be helped to have and to maintain as perfect a dentition as possible, but until this standard is reached, the mobile pedodontic clinics will be devoted to providing an immediate dental service for those children who have dental or oral defects which interfere with their general health and welfare.

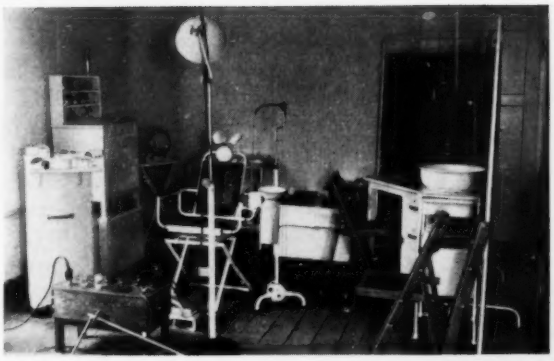
Joliot Curie Platz 1b, Halle/Saale C 2, Germany

1 The examination and operating room of the mobile clinic

2 The section serving as business office

3 Transportable electric power source

4 Drug cabinet and autoclave



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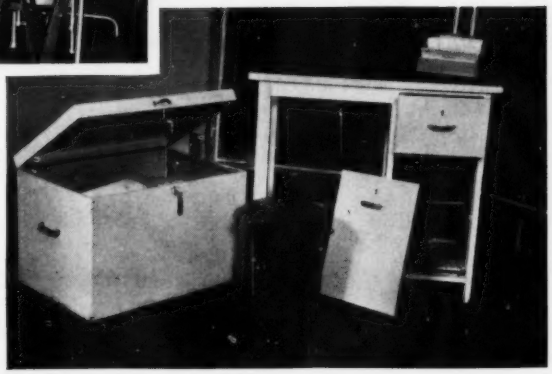

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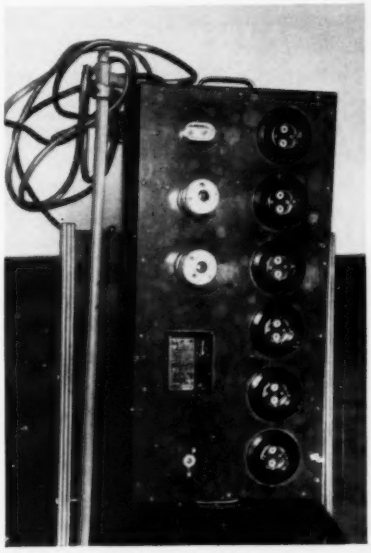

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Use of fluorides in prevention of dental caries

Arthur Engel, A. B. Maunsbach and Martin Runald. *Report Swedish Royal M. Board* 1:1-5 April 12, 1958

The use of fluorides as a means of preventing dental caries long has been the subject of consideration by the Swedish Royal Medical Board. In 1952, the Board appointed a committee of experts to investigate all aspects of fluoridation. On February 19, 1955, the Board submitted a report on the completed inquiry to the government and the king in which it declared that the addition of fluorides to the drinking water would be a measure of great potential value in the prevention of caries in Sweden.

After discussion with dental and medical experts, the Board appointed on February 27, 1957, a new advisory committee which consisted of professors Sven Sellman, Yngve Ericsson and Allan Strålfors.

On January 28, 1958, the committee submitted a comprehensive report entitled *Prevention of Dental Caries by Fluorides.* Supplementary reports were written by experts in the fields of medicine, pediatrics, child welfare, caries research, operative dentistry, biochemistry and nutriology.

These reports stated that there are three principal methods available for caries-preventive use of fluorides: (1) fluoridation of drinking water; (2) administration of fluorides by vehicles other than public water supplies, such as tablets, common salt, milk, flour and bone meal, and (3) topical application of fluorides directly on the tooth surfaces.

It was recommended that communities which request an increase in the fluoride concentration of their public water supplies should be given permission to introduce fluoridation. The administration of prophylactic doses of fluoride in vehicles other than drinking water, however, was not recommended.

The members of the advisory committee and the other experts agreed that continuous attention should be paid to caries-preventive methods other than the administration of fluorides.

The fluoridation of the public water supplies of Stockholm and Göteborg would be a simple and inexpensive measure. It could be carried out at the existing large and medium-sized waterworks. The costs have been estimated at 0.30 Swedish crowns per person and year; distributed to school children only, the expenses would be from 3.00 to 4.00 crowns per child and year. The present expenditures for the public school dental service of Göteborg amount to about 75.00 crowns per child and year.

The city of Norrköping started fluoridation in one of its two waterworks about five years ago. Other cities, Upsala, Eskilstuna and Hälsingborg, are supplied with drinking water that has a natural fluoride content exceeding 1 ppm.

In accordance with its advisory committee, the Board stated that continuous dental and medical control of children and young persons is essential in communities where fluoridation is initiated. The Board recommended that the collected data should be studied.

Holländergatan 17, Stockholm, Sweden

Dental health [of navy recruits]

Richard Woolcott. *Austral. D.J.* 3:402-403 Dec. 1958

Since 1924, data have been collected relating to the incidence of dental caries in recruits enlisting in the Royal Australian Navy. The evidence suggests a gradual increase in the incidence of caries.

The DMF rate per person has increased as follows: from 1924 to 1938, 13.6; 1954, 14.5; 1955, 14.5; 1956, 15.0, and 1957, 15.7.

The percentages of recruits wearing dentures on entry into the service are as follows: From Tasmania, 40 per cent; Victoria, 25 per cent; New South Wales, 20 per cent; South Australia, 18 per cent; Western Australia, 15 per cent; United Kingdom, 8 per cent, and from Europe, nil.

The data indicate a progressive deterioration of dental health over the years. The picture is dismal. Only by control and preventive measures that research may provide can the dental profession hope to cope with dental disease. Today dental defects are developing in the population faster than can be corrected by the existing or predicted dental personnel.

Balmoral Naval Depot, New South Wales, Australia

Plantation

Histologic study of heterogenous bone implants in human beings: preliminary report

William H. Bell. *J.Oral Surg.,Anesth.& Hosp.D. Serv.* 17:3-13 March 1959

The histological, clinical and roentgenographic response of tissue to implants of despeciated calf bone paste was compared with the response to anorganic bone chips inserted in the tooth extraction sockets of 15 patients at the University of Texas Dental Branch. A minimum of four teeth were extracted in each patient, so that one half of the extraction sockets could fill with blood clots and serve as clinical controls. Routine hematoxylin and eosin histologic sections were made of 7, 14, 35, 50, 120 and 180 day old biopsy specimens. The following results were noted:

1. The microscopic changes occurring in the healing tooth socket are not necessarily revealed by roentgenographic or clinical examination.

2. Even though both of the bone substitutes were derived from heterogenous sources, no obvious sensitization reactions occurred in any of the patients.

3. The over-all incorporation of despeciated calf bone takes place by the ingrowth of connective tissue around the chips and subsequent osteoclastic resorption. Eventually there is replacement by bone tissue from the host, but this takes place only indirectly after all remnants of the bone chips have been removed by host osteoclastic activity.

4. The over-all incorporation of anorganic bone implants takes place somewhat differently. The anorganic particles become surrounded by connective tissue which grows in from the periphery. Reactive new bone formation eventually occurs and the graft particles become embedded in host bone, acting only as a scaffolding for connective tissue to grow around and possibly retarding this ingrowth.

5. Neither of the implanted materials stimulated osteogenesis.

6. Definite conclusions as to the fate of these bone implants must await study of a larger series of patients over a longer period of time.

7. The healing capacity of the host is such that healing frequently takes place in spite of what is implanted, and not necessarily because of what is used.

University of Texas Dental Branch, Houston, Texas

Terminology in the field of tooth plantation

Robert B. Hoek, Emmett R. Costich and James K. Avery. *J.Oral Surg.,Anesth.& Hosp.D.Serv.* 17:46-47 July 1959

To facilitate discussion in the field of tooth plantation, the authors present the following definitions with the hope that they will lead to an accepted and uniform terminology:

Replantation—The act of replacing a tooth, with a vital or nonvital pulp, in the same alveolar socket from which it had been removed either surgically or as a result of trauma.

Implantation—The act of imbedding an artificial tooth into the alveolar ridge.

Transplantation—The operation of transferring a tooth, one with a vital pulp or one having had root canal treatment, from one site to another in the same individual or from one individual to another.

Autogenous transplantation—The transplantation of tissue from one site to another in the same individual.

Homogenous transplantation—The transferral of a tooth from one individual to another individual of the same species.

Heterogenous transplantation—The transferral of a tooth from one individual to another of a different species.

Isotransplantation—Transplantation of tissue to the same kind of tissue. This term is not applicable in tooth transplantation because the tissue transplanted is not of the same kind as the tissue bed that receives it. The use of a section of dentin to fill a defect of dentin in another tooth could be described as an isograft.

Homologous and heterologous—These terms are undesirable.

Homoplasty and autoplasty—These terms are undesirable in the field of tooth transplantation.

Autoplant and homoplant—These terms are merely contractions of the terms autogenous transplant and homogenous transplant, and are undesirable.

406 Loraine Building, Grand Rapids, Mich.

Extractions

The effects on the epithelial attachment of extraction of adjacent teeth in Macacus rhesus monkeys

H. E. Simpson. *J.Periodont.* 30:124-125
April 1959

When it is necessary to extract a tooth, the suspicion often arises that the epithelial attachment of the adjacent teeth will be damaged. In an attempt to throw light on this problem, 14 extraction wounds in *Macacus rhesus* monkeys were examined with respect to the epithelial attachments of the teeth bordering the sockets. The extracted teeth had been removed, with as little trauma as possible, at intervals of from three days to eight weeks before the conclusion of the experiment.

In the specimens examined three days after extraction, there was evidence that an injury could occur in the form of a tear which might extend across the interdental septum from the socket to the tooth.

In the other specimens, one week old and older, there was little evidence of injury, although the level of the epithelial attachment tended to be lower and there was generally a more pronounced infiltration of inflammatory cells below the epithelium on the side of a tooth adjacent to a socket.

Sutherland Dental School, Northumberland Road, Newcastle upon Tyne 1, England

A case of subacute bacterial endocarditis

Brit.M.J. No. 5125:844-849
March 28, 1959

A 54 year old woman was admitted to Hammersmith Hospital in March 1958, complaining of vomiting for one day. She had been well until six months before admission, when she had an attack of "right lower lobe pneumonia" shortly after extraction of a tooth. After the extraction there had been a gradual loss of weight, increasing irritability and nervousness, persistent cough and sputum, occasional aching pains in the limbs, increasing dyspnea, sweating and attacks of palpitations. On the night before admission she awoke dizzy and sweating and vomited her tea on rising in the morning. She had had rheumatic fever at the age of 18 years, and thyrotoxicosis at the age of 49 years (treated with radioactive iodine).

On examination she was pale; there was a moist cough, and the temperature ranged from 99° to 100°F. during the first few days. The jugular venous pressure was raised just above normal. Slight finger clubbing was noted.

She was treated with digitalis, mersalyl and sulfonamides, but nausea and dizziness continued. At the end of a week, evidence of hemorrhages appeared in the fundi, red cells were found in the urine, and the spleen was felt. Blood cultures were positive for alpha hemolytic streptococci. Penicillin and streptomycin were given, but the fever continued, with anorexia and dizziness. After a favorable response, the patient relapsed, with a rising blood urea and a fall in the white blood cell count. The penicillin and streptomycin

treatment was replaced with erythromycin and tetracycline, and the patient received a transfusion of two pints of blood. Two weeks later, after complaining of severe headache for a few hours, she collapsed into a coma and died two days later without recovering consciousness.

The clinical diagnosis was chronic rheumatic heart disease, subacute bacterial endocarditis and cerebral hemorrhage. The pathologist's diagnosis was mitral stenosis, healed subacute bacterial endocarditis, splenic infarcts, focal embolic glomerulonephritis, ruptured cerebral mycotic aneurysm, irradiated thyroid gland and polyposis of the large bowel. A rare finding was subacute bacterial endocarditis in the presence of auricular fibrillation.

In the discussion it was brought out that the patient had had five teeth extracted. The following colloquy ensued:

"Dr. Doniach: I should like to ask Professor Russell Fraser, what is the present attitude towards dental extraction in a patient with mitral disease? Do you always cover the extraction with penicillin? This was a classical case, wasn't it? She had five dental extractions and she developed subacute bacterial endocarditis."

"Professor Russell Fraser: Penicillin should be the routine treatment in these cases."

British Medical Association, Tavistock Square, London W.C.1, England

Pulmonary infarction after dental extraction: report of two cases with recovery

Crawford W. Adams and James M. Hudgins. *J.A.M.A.* 170:412-416 May 23, 1959

Two case reports involving men aged 40 and 38 years illustrate the occurrence of pulmonary infarction and phlebothrombosis of the cervical veins after the extraction of teeth.

In the first patient two upper right molars had been extracted after a local infiltration of lidocaine hydrochloride. Two days after the extractions unusual pain developed in the right side of the neck, associated with slight swelling. Five days later pain in the right lower part of the chest and an elevated temperature occurred. The patient was admitted to the hospital and a provisional diagnosis of "virus pneumonia" was made. Ten days after admission to the hospital, the patient's temperature rose suddenly to 104°F. and a roentgenogram revealed an area of infiltration at the left lung base, typical of pulmonary infarction. The diagnoisis of pulmonary emboli originating from a deep cervical vein phlebothrombosis was made. The patient was given bishydroxycoumarin; his temperature returned to normal on the twentieth hospital day. Anticoagulant therapy was continued until the twenty-eighth day. A roentgenogram of the chest on the thirtieth hospital day demonstrated essentially clear lung fields.

This case is of unusual interest because of the development of phlebothrombosis of the neck veins and subsequent pulmonary infarction two weeks after the extraction of infected teeth. Because oral infections may be a source of pulmonary embolization, careful examination of the teeth including roentgenograms should be made in all instances of unexplained pulmonary infarction. The development of a sudden pulmonary or pleural "infection" after dental extraction should alert the practitioner to the possibility of underlying phlebothrombosis of the cervical veins and pulmonary infarction.

In the second case the pulmonary symptoms commenced five days after the extraction of two infected teeth. The subsequent course was marked by two episodes of severe chest pain indicating the development of pulmonary infarcts.

Swift (1940) reviewed 49 instances of neck infections; all but one of the patients with neck infection that caused death had had teeth extracted before the onset of the neck infection, and local or block anesthesia was used in all of these patients.

The superior venous circulation is rarely considered a source of pulmonary infarction. Since there often is a delay of one or two weeks before the symptoms of embolization appear, it is not surprising that this disease of the lung is not associated with the earlier oral trauma. This suggests an important unrecognized cause of pulmonary disease.

1211 Twenty-first Avenue South, Nashville, Tenn.

Oral surgery

Experiment in the use of a biologic sponge and tampon in oral surgery

P. Z. Arzhantreva. *Stomat.,Moscow* 37:2:63-64 March-April 1958

The hemostatic sponge is prepared from plasma, by freeze drying, to form a dry, porous mass which readily takes up moisture. When the sponge is mixed with blood, it forms a yellow film which adheres to the tissues and closes off the small vessels by promoting coagulation. The author added penicillin, 150,000 units, dry or in 1 ml. of solution.

The effectiveness of the preparation was tested in 136 operations and in 28 instances of hemorrhage from small vessels requiring immediate treatment. The surgical operations on 44 ambulatory patients included the following: removal of periradicular cysts, resection of root apexes, removal of unerupted teeth and excision of epulides.

In all patients, hemostasis was achieved within the first few minutes. The postoperative course was smooth, and only in two patients was healing not by first intention.

In 18 patients with periradicular cysts (nine of which were purulent), the cysts were completely removed, the cavity filled with hemostatic sponge and the oral mucous membrane sutured tightly. In only two patients was resuturing necessary; in the remaining 16 patients, healing was by first intention, although several cysts were 3 cm. in diameter.

After the removal of sequestrums in chronic osteogenic osteomyelitis in seven patients, the cavity was filled with hemostatic sponge, and the skin or mucous membrane was sutured tightly. In all patients, healing was by first intention.

The sponge was used five times in operations for resection of parts of the mandible. In these five patients, the sponge stopped bleeding from the small vessels of the bone, and postoperative hematomas did not occur. All wounds in these five patients healed by first intention.

Three patients underwent partial resection of the mandible because of osteodystrophy, in two patients the inferior alveolar nerve was sectioned, and two patients were treated for infection of the antrum. The use of the sponge proved to be completely successful in all patients.

The sponge was used in 25 operations on the soft tissues, including 13 operations for removal of the submaxillary gland, 4 operations for removal of the lymphatic glands, and 4 operations for the removal of oral tumors. In all patients, hemostasis occurred in from one to two minutes, and healing was by first intention.

In 28 patients, the sponge was used to stop severe postoperative hemorrhage. In all patients, hemostasis occurred in the first few minutes.

An antiseptic tampon also has been prepared from blood plasma with penicillin or other medication. The tampon can be shaped with a scalpel and is absorbed by the tissues within several days. The tampon retains penicillin in the wound for from 48 to 72 hours.

This antiseptic tampon was used in intraoral and extraoral operations in 26 patients to stop bleeding from small vessels and to avoid development of hematomas and infection. The operations included: excision of cysts, nine; removal of sequestrums, two; operations on the antrum, five; partial resection of lower jaw, two; resections of the inferior alveolar nerve, two; removal of lymph nodes, four, and plastic operations, two. The hemostatic and antiseptic properties of the tampon proved to be satisfactory. In spite of contamination of the operative field by oral microorganisms, healing was by first intention in all but three patients.

Both the sponge and the tampon can be used to stop hemorrhages and to fill cavities both in bone and in soft tissue.

Medghis, Petrovka 12, Moscow, U.S.S.R.

Case reports

Impending crisis in Addison's disease during oral surgery

John D. Lewis, Charles A. McMahon and A. F. Bloodworth. *U.S.Armed Forces M.J.* 10:727-730 June 1959

Patients with Addison's disease tolerate stress poorly, as the following case report illustrates. A 43 year old white woman, admitted to the hospital for oral surgery, stated that she had consulted several dentists regarding a painful abscessed tooth, but that none of the dentists would consider treating her after learning that she was under medical treatment for Addison's disease. The last dentist whom she had consulted referred her to an oral surgeon, who recommended hospitalization and medical consultation prior to extraction of the tooth.

The diagnosis of Addison's disease had been suspected and later confirmed, three years before, at a hospital where the patient had been admitted in a comatose state. The patient then had been placed on graded daily oral doses of cortisone, the dosage finally being regulated to 12.5 to 25 mg. daily. Two more episodes of coma had occurred between the initial episode and her present admission.

Intraoral examination revealed pronounced pigmentation about the gingival margins, and on the labial and buccal surfaces of the gingival mucosa. The teeth appeared to be in satisfactory repair except for the lower left second and third molars, which had carious lesions. Pain was present on percussion of the second molar, which was slightly mobile and elevated; its removal was indicated.

The patient was hospitalized for four days prior to the scheduled surgery. During this time she received antibiotic therapy and the daily dose of oral cortisone was increased to 75 mg. On the morning of surgery the patient received preoperative medication of 100 mg. meperidine hydrochloride. While being moved from the stretcher to the operating table, the patient vomited a large amount of yellowish fluid.

Initial blood pressure on admission to the hospital was 110/70 mm. mercury. The blood pressure recorded on entering the operating room was 100/60 mm. mercury. At this point an infusion containing 1,000 ml. of 5 per cent dextrose in normal saline solution, to which had been added 30 ml. of aqueous adrenal cortical extract, was started. A left mandibular block was performed, using 2 per cent lidocaine hydrochloride with epinephrine 1:100,000. About one minute after the injection of 1 ml. of the local anesthetic, the patient complained of rapid beating of the heart and associated palpitations of the chest. All manipulations ceased. The recorded blood pressure was 75/50 mm. mercury. The pulse rate was 100 per minute, equal and regular. One hundred milligrams of hydrocortisone sodium succinate was incorporated into the intravenous fluids and the infusion allowed to run freely. Blood pressure was recorded at 60/40 mm. mercury. At intervals of 30 seconds, the blood pressure was recorded. After four to five minutes it gradually rose to the preoperative level of 100/70 mm. mercury. Concurrently, the patient stated that she was greatly improved symptomatically, and the oral surgeon was allowed to continue. Under local anesthesia, the lower left second molar was extracted. Over the next 24 hours only slight bleeding from the operative site was observed, and the usual method of steroid maintenance was continued. Forty-eight hours after the operation she was discharged to her home.

The importance of preoperative steroid preparation, preferably by the parental route, is obvious. Patients with Addison's disease who require oral surgical intervention should be under the combined management of the oral surgeon and physician.

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Malignant tumours of the upper jaw: success and failure in their treatment

R. A. Melnivov. *Problems of Oncology* 3:692-699 Nov.-Dec. 1957

In the past 30 years, 201 patients with carcinoma of the upper jaw and 26 patients with sarcoma of the upper jaw were admitted to the polyclinics of the Institute of Oncology, Leningrad. More than half of the patients had keratinized squamous cell carcinoma. In the early stage of tumor formation, many patients had been referred to dentists or otorhinolaryngologists, who often did not recognize the malignant tumor and treated the patients conservatively. Among the 201 patients, operations based on erroneous diagnoses (maxillary sinusitis or osteomyelitis), had been performed in 52 patients (25.8 per cent). About half of the 201 patients were in Stage III or IV, that is, after metastasis.

A palliative radium therapy was given to 28 patients with metastasizing tumors. The results were extremely unsatisfactory; the average survival time was six months.

The second group of 26 patients received radium therapy and refused to undergo surgery. The average survival time was 11 months. Two of the case reports are of exceptional interest. Both patients received radium therapy under a mask (350 mg. radium in the course of two weeks, at a distance of 5.0 cm. in 12 sittings, for from six to eight hours per session, with a general dose of 6,500 r and 8,000 r). Both patients subsequently refused to undergo operation and are alive; one has survived for five years, the other for six years.

Twelve patients received roentgenotherapy, and two of these also received radium therapy. The results were unsatisfactory; the average survival time was eight months.

Twelve patients were treated exclusively by surgery; all died within three years from recurrence or metastasis; the average survival time was 19 months.

The largest group of patients (118 persons) received both surgery and radium therapy; 22 survived for at least five years, and 10 of the 22 are still alive without recurrence or metastasis.

In carcinoma of the upper jaw, the prognosis in the final stages of the disease is unfavorable.

In the 22 patients who survived for five years or more after combined treatment, a number of conditions favored success. These patients were seen when their disease was in an early stage; the tumors were small and did not encroach on surrounding tissues; regional metastases were rare.

The combined method of treating malignant tumors of the upper jaw appears to be the only suitable and rational one, giving the best ultimate results. It consists of (1) a course of radium therapy of two or three fields (usual dose from 8,000 to 14,000 r), with an interval of from 30 to 45 days, and (2) surgery. The external carotid artery is ligated; electroresection of the upper jaw is undertaken, proceeding if necessary to evisceration of the orbit, radium preparations being introduced into the wound cavity for two to three days.

Leningrad Institute of Oncology, Leningrad, U.S.S.R.

The role of the dentist in the management of patients with oral cancer

John J. Salley. *Bul.Virginia D.A.* 35:15-18 Nov. 1958

Oral cancer probably is the only disease with which the dentist comes in contact that may prove fatal to the patient. The primary responsibility of the dentist is to detect malignant oral lesions early. During treatment he may be called on to treat foci of infection. Rehabilitation of the treated patient often requires the skill of the dentist.

Studies indicate that the five-year cure rate for oral cancer can be doubled (from 33 per cent to almost 66 per cent) if mouth lesions are detected prior to an increase in size exceeding 2 cm. Oral cancer is predominantly a disease of men past the fourth decade of life. Some 90 to 95 per cent of

oral tumors are primarily of one type, squamous cell carcinoma.

Poor oral hygiene promoting chronic irritation probably is an important etiologic factor in oral cancer. This is a fruitful area for the dentist to practice preventive dentistry and to enhance the chance of early diagnosis. A thorough inspection of the soft tissues of the mouth can be performed in a short time. This visual and digital inspection can start with the mucosal surfaces of the lips, progressing posteriorly along the vestibules, right and left buccal mucosa, hard and soft palates, pillars, posterior pharyngeal wall, retromolar region and gingivae. The tongue and floor of the mouth should be examined closely. All surfaces of the tongue should be visualized and palpated. The head, face and neck should be inspected for ulcers, lumps, enlargements, losses of contour and asymmetries. The task of the surgeon or roentgenotherapist is made much easier if all patients with neoplasms are referred to him at the early, more manageable stage. A patient with a suspicious lesion should be referred by the detecting dentist to a physician who should perform the biopsy.

If the diagnosis of oral cancer has been established, the dentist may be called on as a consultant on general oral health problems. In the event of surgery, extensive defects or deformities may be created, and impressions for study casts may prove invaluable in the later rehabilitation of the patient. Every patient for whom roentgenotherapy is contemplated should be seen by a dentist prior to treatment for evalution of infected regions. Any untreated inflammatory lesion may serve as an initiating point for subsequent radionecrosis. The extraction of infected teeth which are in or contiguous to the field of radiation often is indicated. This relatively simple procedure may aid immeasurably in the future comfort and welfare of the patient. Frequently an oral cancer patient may be freed of all malignant lesions only to have the painful manifestations of radionecrosis develop later.

In rehabilitation of the oral cancer patient, the dentist may prove to be a valuable member of the cancer control team by virtue of his knowledge of prosthetics. Many patients are in need of prostheses. Obturators may be required, or complete or partial dentures; artificial noses and ears have been fabricated by dentists whose experience with matching colors and shades probably is superior to that of a member of any other group. Simple supportive care and instructions in home care will aid the patient in reducing local irritation of oral tissues which have had their natural resistance lowered by radiation.

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Malignant oral tumor on the increase, especially in women

A. Fox. *Zahnärztl.Welt & Reform* 60:80
Feb. 10, 1959

Malignant tumors of the oral cavity, especially of the floor of the mouth and of the lower jaw are steadily increasing in middle-aged and senescent women.

These tumor types at present constitute from 15 to 17 per cent of malignant oral tumors reported in the literature. The number of women who have malignant tumors of the floor of the mouth or of the lower jaw has increased enormously during the last five years. In 1955, of the women between the ages of 40 to 70 years with malignant tumors, only from 2 to 3 per cent had tumors of the floor of the mouth or of the lower jaw; today, this figure has risen to almost 10 per cent. In this tabulation, only the reported incidence of these malignant tumors could be considered; there are, undoubtedly, many more instances which were unreported or undetected.

The percentage of patients with malignant oral tumors who can be considered as being cured depends on the absence (or low degree) of metastatic development at the time treatment (surgical or roentgenotherapeutic) was initiated.

Of the 115 case reports studied, 52 per cent of the women patients survived in whom malignancy was limited to the floor of the mouth. The percentage of cured women patients in whom the tumorous growth had infiltrated the tongue, the lower jaw, the cheeks or the lips was far less favorable; only 19 per cent survived.

The importance of early detection and immediate treatment in all instances of oral tumors, benign or malignant, cannot be overemphasized.

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Histology

Are there preformed pathways between enamel and dentin?: an electronmicroscopic investigation

Hans Lenz. *Deut.zahnärztl.Zschr.* 14:272-279 March 1959

One of the unsolved but still frequently discussed problems in dental anatomy and histology is whether minute preformed pathways exist between the enamel and dentin in human and animal teeth.

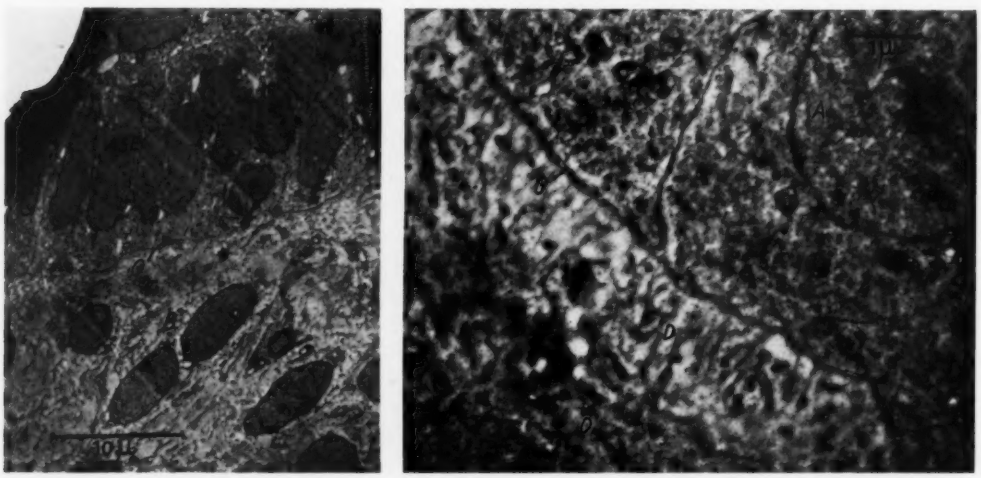
Recently, various authors have reported that they have observed preformed pathways between enamel and dentin which connect the organic matrix of these tooth structures with the pulp. These authors assumed that these organic structures, consisting either of reticular fibers or capillaries, are true lines of communication through which the enamel is nourished by the pulp by way of the dentin.

An electronmicroscopic investigation was carried out on human and animal teeth at different stages of development at the Research Center for Micromorphology of the Fritz Haber Institute in Berlin-Dahlem. Albino mice were used.

Electronmicroscopic studies revealed that in the teeth of both man and mouse, the enamel organ is completely separated from the surrounding connecting tissue and the pulp by a submicroscopic membrane. Neither in the earliest stages of tooth development and growth nor during the formation of enamel and dentin were any preformed pathways detected. There were no structures between ameloblasts and pulp cells which could confirm the opinion that the enamel matrix is formed by the pulp. After the development of the two phylogenically older tissues of the tooth, enamel and dentin, and the addition of cementum as the last differentiation, the enamel is not nourished by the pulp.

Figure 1 (Left) Tooth germ of a human embryo. The outer epithelial tissue is separated from the connective tissue by a submicroscopic membrane. ASE-outer epithelial tissue. G = membrane. B = connective tissue

Figure 2 (Right) Outer epithelial tissue of enamel (mouse) at the time of dentin formation. No connection between ameloblasts and odontoblasts. A = ameloblasts. D = dentin. G = membrane. O = odontoblasts



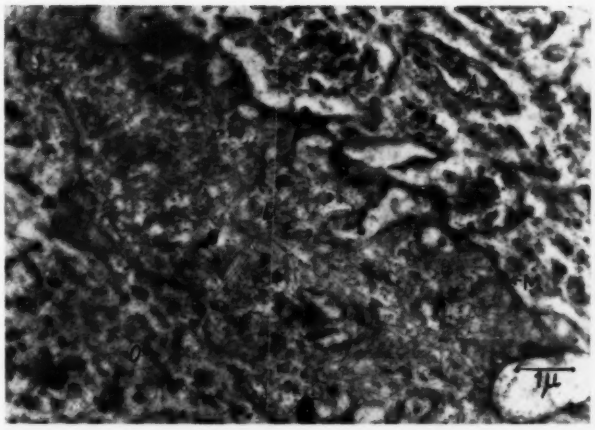


Figure 3 Formation of human dentin. Beneath the submicroscopic membrane a layer of dentin has been formed by the odontoblasts. No pathways cross the membrane. M = membrane. D = dentin. O = odontoblasts. A = ameloblasts

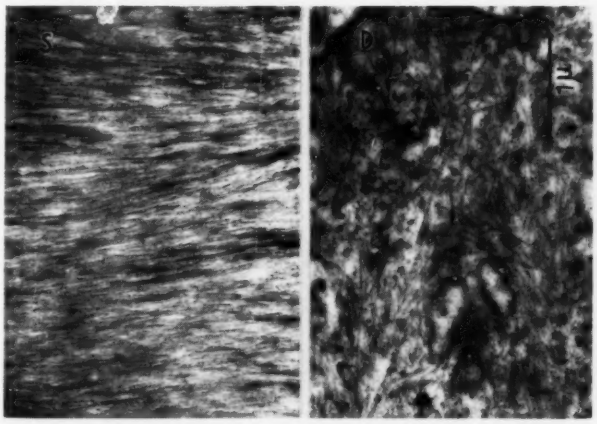


Figure 5 Organic matrix of human enamel and dentin. Left: enamel matrix. Right: dentin matrix. Comparison shows the difference in structure. S = enamel matrix. D = dentin matrix

Figure 4 Formation of the human enamel matrix on the calcified dentin layer. The organic enamel matrix originates outside of the pulp and within the protoplasm of the ameloblasts. S = enamel matrix. D = dentin. A = ameloblasts

Series of electronmicroscopic pictures showed clearly that the dentin originates from odontoblasts within the pulp whereas the enamel is formed by ameloblasts covering the pulp chamber. Both structural layers are separated by the submicroscopic membrane and not connected by preformed pathways. The organic enamel matrix is differentiated from the dentin matrix not only in regard to its origin but also in regard to its morphologic form and structure. The cross-striated collagenous fibers of the dentin are clearly distinguishable from the well-oriented enamel rods.

The concept that in human and animal teeth minute preformed pathways exist between enamel and dentin could not be confirmed by electronmicroscopic studies. Neither could it be proved in these investigations that at any stage of tooth development the enamel and dentin have a common matrix.

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Pathology

Pathographies of speech defects

G. Panconcelli-Calzia. *München.med.Wschr.* 101:248-250 Feb. 6, 1959

Patients with speech defects (whether inherited or acquired) seldom have given detailed reports on their linguistic difficulties. Some secondhand reports on the history and description of speech imperfections of various historic persons are available, but most of these reports are not reliable because of the inadequate knowledge of the authors in regard to cause and effect.

Adequate histories of patients with speech impairments such as clipped, explosive, incoherent, jumbled, mirror, plateau, scanning or staccato speech are lacking even today.

By presenting the following brief descriptions of historic persons with various speech defects, the author hopes to inspire dentists and physicians to contribute material (case and family reports) on their patients with similar defects looking toward a planned collection of pathographic data. This collection is intended to form the basis for research on the etiology, pathology and therapy of speech defects.

The pathographies of the following emperors and kings are presented: (1) Claudius I (Tiberius Claudius Drusus Nero Germanicus), born 10 B.C. and died 54 A.D., Roman emperor, had numerous physical and psychical handicaps, mainly lisping and stammering, deafness (probably inherited) and weakness of intellect (reported by Tacitus); (2) Louis II (825-875), Holy Roman emperor, suffered from stammering and was, therefore, called "Louis the Stammerer" in the Annales Bertiniani; (3) Louis I (1786-1868), king of Bavaria, was unable to articulate words properly; his speech was extremely explosive, a defect probably caused by a disease of the brain (reported by K. Th. von Heigel), and (4) Victor Emmanuel III (1869-1947), king of Italy, avoided as much as he could addressing the public; whenever he spoke, a spasm of the lower jaw occurred which forced him to utter each syllable separately, a defect which, according to L. Morandi, increased in his later years.

The pathographies of the following physicians and philosophers are presented: (1) Niccolo Tartaglia (1499–1577), Italian mathematician, was severely injured in early childhood by a sword stroke which mutilated his face; he had difficulty in enunciating and joining together syllables (the Italian word "Tartaglia" means "Stutterer"); (2) Girolamo Cardano (1501–1576), Italian physician and philosopher, reports in his autobiography: "my father stuttered and I also cannot speak fluently without repeated efforts," and (3) Kussmaul in his book *Die Störungen der Sprache* (*Speech Defects*) which was published in 1877, reported that many contemporary French and German physicians (Becquerel, Merkel, Wyneken, and Coën) were afflicted with impaired speech function but used their own linguistic defects to study the etiology, pathology and therapy of such subnormal speech developments.

Other historic persons with known speech defects were the priests: Fra Domenico (14th century?) and Philipp Melanchthon (1497–1560); the poets or writers: Torquato Tasso (1544–1595), Vittorio Alfieri (1749–1803), Allessandro Manzonu (1785–1837), Anatole France (1844–1924), and Alfredo Panzini (1863–1939); the politicians: Demosthenes (384–322 B.C.,) Camilli Cavour (1810–1861), Francesco Crispi (1818–1901), and Theodore Roosevelt (1858–1919).

Lange-Eichbaum and Kurth in their book *Genie, Irrsein und Ruhm* (Genius, Insanity and Fame), fourth edition, 1956, emphasized that pathographies of speech defects are essential not only for psychiatry but for medicine and dentistry as well as for the entire field of the sciences, because speech represents the first and still the most important step in the communication of thought. Pathographies of speech defects also are important for the recently developed science, phoniatrics.

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Hypothyroidism and arthritis

J.A.M.A. 170:632 May 30, 1959

Q.—A dentist has said that sore gums under dentures frequently are caused by a lack of mucin in the saliva. This condition is found in hypothyroidism and is corrected by giving thyroid extract. Could a similar lack of mucin in synovial fluid promote arthritis? It is said that years ago thyroid extract was used in the treatment of arthritis.

A.—There is no evidence of a causal relationship between hypothyroidism and arthritis. In some situations where a low metabolic rate is encountered, desiccated thyroid has been given on an entirely empiric basis in the past. The assumption that a lack of mucin in the synovial fluid could promote arthritis does not appear to be a valid concept from an endocrine standpoint.

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Differential diagnosis in peripheral facial paralysis in children: possible association with poliomyelitis

F. Koch. *Deut.med.Wschr.* 83:2073-2075 Nov. 21, 1958

Bell's palsy, peripheral facial paralysis caused by lesions of the seventh cranial nerve and resulting in a characteristic distortion of the face, is the most common form of facial paralysis observed in children.

Virologic and serologic examinations revealed in 15 of 21 patients treated at the Pediatric Clinic of the University of Giessen, Germany, a 300 per cent increase in the antibody titer during convalescence. In these 15 patients, the peripheral facial paralysis was associated with poliomyelitis. In three of these patients there were pathologic changes in the cerebrospinal fluid.

The majority of the instances of facial paralysis occurred during the winter. Because "idiopathic" and "rheumatic" facial paralysis show a similar seasonal incidence, it is possible that the characteristic distortion of the face is related to poliomyelitis and not to rheumatism.

The progressive increase in the incidence of facial paralysis observed during the last ten years, in spite of antihistamine therapy and surgical compression of the seventh cranial nerve, probably has been caused by an involvement of the upper spinal region during the initial stage of poliomyelitis.

The seventh cranial nerve is the main efferent nerve of the human face. The cells of its origin are in the pons cerebelli, and the nerve emerges from the stylomastoid foramen to innervate all the muscles active in facial expressions, the platysma and stapedius muscles. This nerve may be involved at any part of its course by tumorous, vascular, infectious or inflammatory lesions.

For differential diagnosis in peripheral facial paralysis, not only poliomyelitis but the other possible causative factors, especially tumors or traumas of the parotid gland, should be considered. A type of facial paralysis simulating Bell's palsy may occur in children after injection of a local anesthetic to block the inferior dental nerve.

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The Pierre Robin syndrome

Med.Klin. 54:695 April 3, 1959

Q. May I have information on the etiology, symptomatology and therapy of the Pierre Robin syndrome?

A. The French physician, Pierre Robin, described in 1929 a specific type of congenital mandibular micrognathia associated with glossoptosis and cleft palate, which symptom complex later was widened by Lapage (1937), Callister (1937), Dunn (1937), Mathis (1949), and Kennedy and Thompson (1950.) The syndrome consists of hypoplasia of the lower jaw, micrognathia, cleft in the lower jaw, cleft palate, glossoptosis, microglossia and asymmetry of the face and the jaws. Occasionally a bifid tongue is associated with the syndrome. Although the etiology is unknown, it can be assumed that rickets is a contributory factor. Roentgenographic diagnosis serves to demonstrate the extent to which the face and the skull participate in the pathologic changes and to differentiate between the hereditary and the acquired forms. The treatment recommended consists of surgical correction by osteotomy or ostectomy. Occasionally some degree of improvement can be obtained by orthodontic procedures.

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Therapeutics

Excessive salivation in Parkinsonism

Lewis J. Doshay. *J.A.M.A.* 169:902 Feb. 21, 1959

In the *Journal of the American Medical Association,* volume 168, issue of September 6, 1958, page 138, it was asked whether anything can be used to check the excessive salivation which occurs in patients with paralysis agitans. The consultant indicated that there is no effective drug for this condition. In a report by Kate Constable and the author (1957), it was shown that a 100 per cent improvement of sialorrhea and drooling was achieved after the use of orphenadrine hydrochloride.

(Dr. Doshay's comment was referred to the J.A.M.A. consultant, who replied: "In the interests of truth, the action of orphenadrine in this connection should be made known. The consultant's experience with orphenadrine in patients with paralysis agitans in general but not with salivation has been disappointing. However, one of its beneficial side reactions may have been overlooked in attempting to determine its overall value.)

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Triamcinolone acetonide in the treatment of recurrent ulcerative stomatitis

Edward V. Zegarelli, Austin H. Kutscher and Herbert F. Silvers. *J.Periodont.* 30:63-66 Jan. 1959

Triamcinolone acetonide, a powerful new synthetic corticosteroid, was used successfully in the treatment of episodes of recurrent ulcerative stomatitis in nine patients ranging in age from 9 to 55 years. This topically applied corticosteroid, when incorporated in a new adhesive vehicle (Oribase), has been found effective in aborting lesions if applied promptly after initial prodromal symptoms, and in obtaining rapid healing or beginning epithelization of existing ulcers. Triamcinolone acetonide in the adhesive vehicle was applied to lesions by the patient four times a day in a concentration of 0.1 per cent.

The administration of triamcinolone acetonide does not prevent the recurrence of lesions and does not result in any decrease in the size, severity or duration of recurrent lesions, unless the drug is readministered. The remission period between lesions is not lengthened if therapy is discontinued on healing of a given crop of ulcers. Thus, triamcinolone therapy should be administered with the realization that its action is entirely suppressive and temporary rather than curative.

The total dose administered and the duration of therapy must be watched carefully. It is essential that therapy be of a discontinuous nature.

Weakness was noted by two of the nine patients on prolonged although discontinuous therapy—an observation not inconsistent with the pharmacology of this drug. No other side effects were noted.

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Should prescriptions for barbituric acid derivatives contain a direction for use?

Deut.med.Wschr. 84:618 March 27, 1959

Q.- Is it necessary or desirable to add to the prescriptions for barbituric acid derivatives (barbiturates) directions for use? Are these drugs subjected to the regulations of the Narcotic Act?

A.- Proper prescription writing for any drug requires a carefully worded direction for use; such statements as "use as directed" should be avoided. In many states, laws relating to the distribution of narcotics, barbiturates and other drugs have been enacted. As yet, barbiturates are not subject to the regulations of the Federal Narcotic Act.

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Chiasson. Dentition of the Alaskan fur seal 23 Apr.
Colyer. Injury to and rate of growth of an elephant tusk 49 Aug.
Keil. Tooth attrition and "dentin lesion" in comparative odontology 8 Aug.
ORAL: See also Dentin—anatomy; Enamel—anatomy; Mandible and maxilla—anatomy
Lenz. Are there preformed pathways between enamel and dentin?: an electronmicroscopic investigation 26 Dec.
Müller. Anatomic orientation points in dental roentgenography 17 Feb.

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Goldman. Deaths under anaesthesia in the dental surgery 5 July
Monheim. Anesthetic emergencies in the dental office 46 Jan.

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Branch. Role of the anesthesiologist in ambulatory dental surgery 23 Nov.
Christensen. New agent for shortening recovery time in oral surgery (methylphenidate hydrochloride) 11 June
Pflüger. Endotracheal anesthesia for surgical repair of clefts in lips, jaws and palates 23 May
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Goldman. Fluothane in the dental surgery 22 Nov.
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Krasner. Methitural sodium (Neraval Sodium). a new ultra-short-acting anesthetic for dental surgery: preliminary report 5 Mar.
Redish. Comparison of thiopental sodium, methitural sodium, and methohexital sodium in oral surgery patients 48 Jan.
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Link. Alfred Einhorn, inventor of Novocaine 58 Nov.
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Dibold. Pentobarbital sodium-curare induction for endotracheal intubation anesthesia used in maxillofacial surgery 11 Oct.
Redish. Comparison of thiopental sodium, methitural sodium, and methohexital sodium in oral surgery patients 48 Jan.
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Struzak-Wysokinska. Trichlorcethylene in dental practice 11 Oct.

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Schmidt. History of anaesthesia in South Africa 45 Feb.

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Adler. Recently introduced local anesthetics and their effect on the blood pressure 49 Jan.
Auerbach. Micromethod for the estimation of anesthetics derived from aminobenzoic acid: procaine hydrochloride and tetracaine hydrochloride combined in cartridges for dental anesthesia 30 Aug.
Feldmann. Colorimetric determination of certain local anesthetics with sodium 1, 2-naphthoquinone-4-sulfonate 22 Nov.
Hering. Acupuncture and moxa cautery in Chinese and Japanese dentistry 49 Sept.
Local anesthetics: agents for injection 25 May
Simon. Safe, effective local anesthetic in dentistry 23 Sept.
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Campbell. Absorption of local anesthetics 4 Mar.
Krarup. Unilateral impairment of taste sensation after mandibular anesthesia 36 Apr.
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Feldmann. Principles in the spectrophotometric determination of propoxycaine in the presence of procaine 4 Mar.
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TOPICAL
Allen. Incorporation of ethyl aminobenzoate into an aqueous formulation for a dental lotion 27 Feb.
Local anesthetics: agents for surface application 10 June
Thomason. Dyclonine in general dental practice 46 Jan.

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Hals. Turner teeth: a case of two prematurely erupted premolars 37 Apr.
Karte. Causes and prevention of oral malformations 22 Oct.
Pirruccello. Congenital fossettes of the lower lip: embryogenesis and clinical significance 23 Jan.

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Albrecht. Clinical experience with Reverin, a new broad-spectrum antibiotic, injected intravenously 46 Sept.
Baer. Studies on a bacitracin periodontal dressing 17 May
Bender. Comparative effects of local and systemic antibiotic therapy in the prevention of postextraction bacteremia 19 May
Crone-Münzenbrock. Staphylococcal resistance to antibiotics and its treatment 43 Mar.
Dohnal. Production of tetracycline hydrochloride in Czechoslovakia 55 Aug.
Ferenczy. An antibacterial preparation from hemp (Cannabis sativa L.) 32 Jan.
Giunchi. Candidosis (candidiasis) following antibiotic therapy 36 May
Guillain. Use of Aureomycin for intracanalicular treatment of infectious complications of dental caries 13 Oct.
Herrell. Hazards of antibiotic therapy 46 Sept.
Humperdinck. Penicillin, streptomycin and other antibiotics causing allergic reactions in dentists, physicians and their assistants 26 Jan.
Miller. Postextraction facial inflammation and edema treated by antibacterial drugs and streptokinase intramuscularly 12 Mar.
Mourfield. Clinical evaluation of erythromycin dental cones in oral surgery 14 Jan.
Myerson. Antibiotic lozenges 42 Aug.
Ortel. Development of antibiotic resistance in staphylococci 35 Oct.
Price. Antibiotic inhibitors: effect of certain milk constituents 34 Oct.
Skach. Topical application of tetracyclines in dental practice 42 Aug.
Toto. Proteolytic enzyme-antibiotic preparations in the treatment of oral lesions 38 Nov.

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Weitgasser. Use of medicated soaps for disinfection of the hands of dentists and surgeons 56 Aug.

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Mahrer. Atropinelike poisoning due to tranquilizing agents 40 Oct.

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Hellat. Bacteriologic and microscopic studies of the self-disinfecting factors of normal epithelial layers of the face 37 July
Ortel. Development of antibiotic resistance in staphylococci 35 Oct.
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Baird-Parker. Distribution of lactobacillus species in northern and southern Italian communities 48 May
Box. Observations concerning a genus of viruslike mycotic organism and its relationship to some aspects of oral focal infection 28 May
Chirnside. Bacteriological status of dentine around infected pulp canals 34 Oct.
Cohen. Lactobacilli and streptococcus salivarius in saliva: a preliminary report 52 May
Green. Bacteriolytic agent in salivary globulin of caries-immune human beings 49 Nov.
Green. Respiration of the salivary microbial flora and its relation to dental caries activity 15 June
Jensen. Study of the bacterial flora of the gingiva in various periodontal diseases 23 Feb.
Kalowski. Microbiology of the oral cavity 48 Nov.
Kerr. Antibacterial factors in the secretions of human parotid and submaxillary glands 49 Nov.
Krylova. Granules in oral treponemes 48 Nov.
Malone. Lactobacillus test–dentistry's forgotten tool 45 Nov.
Mergenhagen. Effect of certain amino acids and peptides on hyaluronidase production by Staphylococcus aureus 51 Mar.
Mugnier. Mycologic research on "pyorrhea" 17 May
Nevin. Availability of bacterial growth factors in human gingival tissue 51 Jan.

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Wais. Significance of findings following biopsy and histologic study of 100 periapical lesions 43 Jan.

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Gade. Pressureless bite recording with occlusal equilibration of complete dentures 21 May

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Leupold. Blood chemistry and tumor development 46 Apr.
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Provenza. Effects of the topical application of a vasoconstrictor and a vasodilator on the capillary circulation of the dental pulp 30 June
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Oral surgery during anticoagulant therapy 35 Sept.
Scopp. Dental extractions in patients undergoing anticoagulant therapy 35 Apr.
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Kohlschmid. What the dentist should know about oral manifestations of various blood diseases 57 July
Meyer. Hodgkin's disease of the oral cavity 21 Nov.
Ritter. Changes in tooth structure and color in children with erythroblastosis 37 Apr.
Stick. Congenital hematoporphyria (porphyrocytosis): report of case 38 May
Trummert. Hodgkin's disease discovered 125 years ago 23 Jan.
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Adler. Recently introduced local anesthetics and their effect on the blood pressure 49 Jan.

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Henrichsen. Bone formation and cartilage calcification in the maxillofacial region 12 Sept.
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Bell. Histologic study of heterogenous bone implants in human beings preliminary report 19 Dec.
Georgiade. Use of calf bones in transplantation 34 Apr.
Ivy. 39 and 38 year follow-up of mandibular bone grafts in three cases 9 Oct.
Moss. Bone graft substitutes—a progress review of anatomy 21 July
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Irving. Problems of calcification of teeth and bone 14 May
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Amler. Bone regeneration following grafts with polyvinyl plastic sponge 9 Mar.
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Lash. Relationship of pH to calculus precipitation 33 Nov.
Leung. Factors controlling the deposition of calculus 34 Nov.
Reiser. Heritability of calculus formation in human twins 36 Oct.
Schwarzkopf. Gingivitis produced by calculus accumulation: report of case 32 June
Swan. Root planing 27 Oct.
Ujhelyi. Histochemical investigations of supragingival and subgingival calculus 37 Oct.
Wasserman. In vitro calcification of dental calculus 51 Jan.

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Hardy. Why do cancer patients die? 39 Oct.
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Argonz. Cancer of tongue: 100 cases 21 June
Balduzzi. Carcinoma of the lip, tongue and floor of the mouth 17 Jan.
Bonse. Treatment of oral cancer by a combination of roentgenotherapy and radical surgery 8 May
Chaudhry. Primary malignant melanoma of the oral cavity: a review of 105 cases 30 Nov.
Dontenwill. Dormant cancer cells of oral tumors 40 May
Epidemiology of cancer 36 Aug.
Güntert. Epidermoid carcinoma of the jaw developed from a follicular cyst: report of a unique case 50 July
Hales. Malignant melanoma of the hard and soft palate 37 May
Hetessy. Precancerous lesions in the oral cavity 29 Nov.
Hoggins. Melanoma of the hard palate 25 Sept.
Krantz. Results of treatment of carcinoma of lower lip. 31 Jan.
McGrath. Progress in oral cancer 38 Oct.
Salley. Role of the dentist in the management of patients with oral cancer 24 Dec.
Santagati. Roentgenotherapy of melanocarcinoma in the maxillofacial region 15 Dec.
Schrire Cancer of the lip 18 June
Trieger. Cirrhosis and other predisposing factors in carcinoma of the tongue 18 June
Trieger. Significance of liver dysfunction in mouth cancer 24 Sept.
Van Dellen. Early diagnosis of oral cancer 37 Aug.

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Clement. Antiquity of caries 57 Feb.
Darling. Studies of the early lesion of enamel caries: its nature, mode of spread, and points of entry 31 July
Krasse. Treatment of patients with rampant caries 14 Mar.
Nevitt. Study of the use of aqueous methyl red as an indicator of caries activity 50 Apr.
Rudinu. Spontaneous dental caries in animals 38 May
Stelling. Dental caries in man and laboratory animals: a comparison 15 Mar.

DIET IN RELATION TO: See also–sugar and starch in relation to, listed below; Diet and nutrition–relation to teeth
Downs. Report of dental findings of Seventh Day Adventist students as compared to comparable students in other schools 42 Oct.
Dustin. Nutrition in prevention of dental caries 38 Feb.
Egyedi. New "glycogen theory" of caries etiology 51 Apr.
Milk and dental decay. 29 July
Seith. Relation between postwar nutrition and increase in caries incidence in Australia 44 Aug.
Shaw. Dairy products and dental health 44 Sept.
Slack. Apples and dental health 42 Oct.
Toverud. Studies on the lactic acid production in water-saliva-plaque mixtures 20 Jan.
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ETIOLOGY AND CONTROL: See also–diet in relation to, listed above; special therapy, i.e.–fluoride for prevention, listed below, Silver nitrate, etc.
Green. Respiration of the salivary microbial flora and its relation to dental caries activity 15 June
Gustafson. Dental structure and caries. An introduction 21 Feb.
Kruger. Effect of 'trace elements' on experimental dental caries in the albino rat. I. A study of boron, copper, fluorine, manganese and molybdenum 45 May
Kruger. Effect of "trace elements" on experimental caries in the albino rat II. A study of aluminium, boron, fluorine, iodine and vanadium 20 Nov.
MacDonald. Bacteriology of dental caries 17 Mar.
Malone. Lactobacillus test–dentistry's forgotten tool 45 Nov.
Muracciole. Experimentally produced caries by exposure to solutions with a base of refined glucides 40 Feb.
Pybus. Dental caries and atmospheric pollution 18 Nov.
Winniker. Caries-reducing effects of niobium and tantalum 43 Sept.

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Engel. Use of fluorides in prevention of dental caries 18 Dec.
Ericsson. Distribution and reactions of fluoride ions in enamel-saliva environment, investigated with the radioactive fluorine isotope F^{18} 47 Aug.
Sturgeon. Plebiscite on continuing fluoridation in Thorold, Ontario 19 Nov.

FLUORIDE FOR PREVENTION–in water supplies
Ash. Fluoridation at the Salem and Beverly water works 21 Jan.
Banaschewsky. Fluoridation in Norway 50 Apr.
Expert committee on water fluoridation: first report 51 Apr.
Garcelon. Five years' experience with fluoridation in Norway, Maine 31 July
Geever. Pathologic studies in man after prolonged ingestion of fluoride in drinking water. I. Necropsy findings in a community with a water level of 2.5 ppm 36 Feb.
Geever. Pathological studies in man after prolonged ingestion of fluoride in drinking water 37 Feb.
Geschwind. Interrelation between fluoride contents of drinking water and of tooth structures 54 Apr.
Knijnikov. Effect of water with a high fluorine content on the health of the adult population 20 Nov.
Ludwig. Hastings fluoridation project: I. Dental effects between 1954 and 1957 (New Zealand) 45 Sept.
Status of controlled fluoridation in the United States 53 Apr.
Water fluoridation 45 Oct.
Zamorano. Incidence of caries after five years of fluoridation 30 July
Zemlyanitskaya. Fluorine content in the water sources of the Tatar and Mari Soviet Republics 45 May
Zipkin. Fluoride deposition in human bones after prolonged ingestion of fluoride in drinking water 37 Feb.

FLUORIDE FOR PREVENTION–topical application
Gray. Electron microscopic observations of the differences in the effects of stannous fluoride and sodium fluoride on dental enamel 46 May
Miller. Silver nitrate and sodium fluoride on enamel caries 18 Nov.
Nevitt. Topical applications of sodium fluoride and stannous fluoride 46 Oct.
Norris. Dental use of stannous fluoride 26 Aug.
Scheinin. Effect of sodium fluoride and potassium fluoride solutions on the solubility of dental enamel 31 Oct.
Volker. Chemistry of the tooth surface and its relation to dental caries susceptibility–combined with–fluorides and dental health 29 July

IN CHILDREN: See also–incidence, listed below; Statistics–dental defects
Bergman. Studies on mineralized dental tissues XII. Microradiographic studies of caries in deciduous teeth 17 Apr.
Wells. Oral health survey of 29,550 Kansas City, Missouri, elementary school children 51 May

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Davies. Epidemiology of dental caries 38 Feb.
Lind. Longitudinal study of tooth eruption and the development of caries in a group of Swedish school children 5 Nov.
Schranz. Studies of the caries incidence in prehistoric children's skulls in Hungary 40 Nov.

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Goldworthy. Biology of the children of Hopewood House, Bowral, N.S.W.II. Observations extending over five years (1952-1956 inclusive) 18 Nov.
Seith. Relation between postwar nutrition and increase in caries incidence in Australia 44 Aug.

INCIDENCE, CEYLON
Rice. Dental caries experience of children at Maharagama, Ceylon 45 Oct.

INCIDENCE, CZECHOSLOVAKIA
Miksa. Frequency of dental caries in the deciduous and permanent molars of Czechoslovakian school children 50 May

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Zamorano. Incidence of caries after five years of fluoridation 30 July

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Rusu. Statistical data on the caries incidence in a Romanian mining district 42 Oct.

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Gerdin. Statistical studies on caries frequency in school children of two Swedish communities 52 Apr.

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Davies. Effect of sugar in various forms on the rate of spread of occlusal caries in the lower molars of rats 14 Mar.
Dostál. Effects of saccharides on tooth substances 56 Mar.
Jenkins. Influence of the refinement of carbohydrates on their cariogenicity: in vitro experiments on white and brown flour 13 Sept.
Mueller. Caries-producing potential of chocolate 50 May
Stocker. Sweet tooth and decay 52 May
Sullivan. Freedom from caries: case report 48 May
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SUSCEPTIBILITY STUDIES
Green. Bacteriolytic agent in salivary globulin of caries-immune human beings 49 Nov.
Green. Mystery of caries immunity 53 Apr.
Hadjimarkos. Trace element selenium and its influence on dental caries susceptibility 14 Mar.
Petrie. Caries susceptibility test for patient education 19 Jan.
Shannon. Salivary sodium, potassium, and chloride

levels in subjects classified as to dental caries experience 39 Feb.
Steinman. Experimental caries with human foods 45 May
Volker. Chemistry of the tooth surface and its relation to dental caries susceptibility—combined with—fluorides and dental health 29 July

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Henrichsen. Bone formation and cartilage calcification in the maxillofacial region 12 Sept.
Wurmbach. Growth of the facial and cranial skeleton: the zoological viewpoint 35 June

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Hofmann. Temperature rise in the pulp chamber during cavity preparation 13 Nov.
Hori. Supplementary histopathological study on transaction of changes in pulp observed after cavity preparation 18 Aug.
Jensen. Newer methods of cavity preparation 25 Mar.
Shovelton. Further investigation of the effect of cavity preparation on the human dental pulp 39 Jan.

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Paffenbarger. Silicate cements: how to select and use them 4 Feb.
Paffenbarger. Zinc phosphate and silicate cements 20 Oct.
Swartz. Effect of certain restorative materials on solubility of dentin 18 July

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Brauer. Reaction of metal oxides with o-ethoxybenzoic acid and other chelating agents 23 Mar.
Fonterrada Vieira. Factors affecting the setting of zinc oxide-eugenol impression pastes 35 Nov.
Mumford. Temporary restorations and dressings 16 Aug.
Paffenbarger. Zinc phosphate and silicate cements 20 Oct.
Smith. Setting of zinc oxide-eugenol mixtures 20 Sept.

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Jensen. Effect of two cementing materials on the gingival tissues 38 Jan.
Mumford. Temporary restorations and dressings 16 Aug.
Swartz. Effect of certain restorative materials on solubility of dentin 18 July

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Paynter. Study of the structure, chemical nature, and development of cementum in the rat 18 Apr.
Zander. Continuous cementum apposition 15 Aug.

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Beek. Projection of angles and line sections in teleroentgenography: description of the Groningen cephalostat 3 May
Ceballos. Roentgen diagnosis of sex based on adult skull characteristics: comparison study of cephalometry of male and female skulls filmed in frontal projection 5 May
Sanders. McClean cephalostat 11 Apr.
Sassouni. Cephalometric identification: a proposed method of identification of war-dead by means of roentgenographic cephalometry 39 Nov.

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Miles. Sebaceous glands in the lip and cheek mucosa of man 31 May

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Auerbach. Micromethod for the estimation of anesthetics derived from aminobenzoic acid: procaine hydrochloride and tetracaine hydrochloride combined in cartridges for dental anesthesia 30 Aug.
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Buckman. Balanced premedication in pedodontics 5 Jan.

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Burian. Congenital cleft lip and cleft palate: postoperative complications 34 Sept.
Conway. Effect of supplemental vitamin therapy on the limitation of incidence of cleft lip and cleft palate in humans 16 July
Douglas. Role of environmental factors in the etiology of 'so-called' congenital malformations 34 Apr.
Kernahan. New classification for cleft lip and cleft palate 23 July
Koivumaa. Clefts of lip and palate: their treatment in Finland 34 Sept.
Peer. Study of 400 pregnancies with birth of cleft lip-palate infants: protective effect of folic acid and vitamin B_6 therapy 37 Nov.
Roberts. Cleft palate feeding aid 7 May
Sarnat. Palatal and facial growth in Macaca rhesus monkeys with surgically produced palatal clefts 31 Feb.

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Dummler. Orthodontic treatment after surgical closure of cleft lip, cleft jaw and clefts in the hard and soft palate 22 Apr.

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Caramelli. Role of the association between congenital heart disease and cleft lip and palate in surgical mortality 42 Nov.
Millard, Jr. Preservation of natural landmarks in unilateral cleft lip 8 Oct.
Münnich. Primary repair of cleft palate 14 Feb.
Pésková. Surgery involving the intermaxillary bone in repair of complete bilateral cleft lip and cleft palate 26 Nov.

Pflüger. Endotracheal anesthesia for surgical repair of clefts in lips, jaws and palates 23 May
Schrudde. Preliminary osteoplasty in infants with bilateral cleft lip and cleft palate 26 Nov.
Tempest. Some observations on blood loss in hare-lip and cleft palate surgery 13 Feb.

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Danzeisen. Visit to Polyclinic no. 3, Russia 53 June

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Siemens. Toothbrushes have many uses 57 Oct.
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Svejda. School dental service in Czechoslovakia 47 May
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Bredy. Caries, periodontal disease and malocclusion in children entering the public schools in Jena, Germany 29 July

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Dibold. Pentobarbital sodium-curare induction for endotracheal intubation anesthesia used in maxillofacial surgery 11 Oct.

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Catalano. Ectodermal cyst and giant cell tumor of the upper jaw: report of three cases 8 Oct.
Güntert. Epidermoid carcinoma of the jaw developed from a follicular cyst: report of a unique case 50 July
Pimenova. Comparative study of the methods of surgical treatment of jaw cysts 8 May
Seidner. Conservative treatment of inoperable cysts of the oral cavity: report of five cases 6 Oct.

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van der Woerd. Modern organization of dental services in the armed forces of various nations 57 June

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Reither. Denture stomatitis, a dental as well as a medical problem 10 Dec.

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Muhler. Nutritional aspects of periodontal disease 14 Dec.

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Stransky. Experimental dental caries 44 Sept.

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Hunt. Effects of ascorbic acid deficiency on the teeth and periodontal tissues of guinea pigs 26 Oct.

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Hendrix. Open reduction of mandibular condyle: a clinical and experimental study 12 Oct.
Johnson. New method for reduction of acute dislocation of the temporomandibular articulations 33 Apr.

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Thoma. New department of stomatology at the School of Medicine, Boston University 46 July

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Lundquist. Electromyographic analysis of the function of the buccinator muscle as an aid to denture retention and stabilization 20 Aug.
Vyklický. Electromyographic studies of certain masticatory muscles in physiologic condition 47 Feb.

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Fischer. Biologic synthesis of human teeth 51 Mar.
Karte. Causes and prevention of oral malformations 22 Oct.
Lenz. Electronmicroscopic investigations of the development of ameloblasts and enamel 14 Apr.
Symons. Lipid distribution in the developing teeth of the rat 49 Feb.

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Grahnén. Enamel defects in the deciduous dentition of prematurely born children 42 May

Keil. Enamel and dentin: an ontogenic and phylogenic study 57 Aug.
Klees. Regeneration of the enamel cuticle 43 Nov.
Lenz. Electronmicroscopic investigations of the development of ameloblasts and enamel 14 Apr.

ANATOMY
Hammarlund-Essler. Microradiographic-microphotometric and X-ray diffraction study of human developing enamel 40 Sept.
Klees. Histological studies of lamellae in human enamel 30 Oct.
Lenz. Electronmicroscopic studies of the organic matrix of enamel and dentin 28 Oct.

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Gustafson. Dental structure and caries. An introduction 21 Feb.
Hadjimarkos. Selenium content of human teeth 42 July
Kerebel. Histological investigation of the organic elements of human enamel 47 June
Little. Study of the inorganic carbon dioxide in intact human enamel 45 Nov.
Müller. Histochemical and biophysical studies of the hard tooth substances 14 May

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Krohn. Effect of the administration of steroid hormones on the gingival tissues 34 June
Krönke. Changes in the periodontium of rat molars occurring after hypophysectomy 25 Feb.
Shafer. Salivary gland function in rats. 11. Effect of thyroid function on salivary flow and viscosity 15 June
Stahl. Response of periodontal tissues to intraoral injections of somatotropic hormone in young adult male rats 24 Feb.

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Coker. Treatment of trigeminal neuralgia with ether and adrenocortical hormone 34 Aug.
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Schneider. Postoperative edema and its reduction by trypsin 25 Nov.
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Newbrun. Changes in microhardness of enamel following treatment with lactate buffer 43 Oct.
Nihei. Study on the hardness of human teeth 52 Oct.

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Hargreaves. Clinical eruption of permanent teeth and observations noted during this period 14 Aug.
Morris. Disorders associated with weaning and teething 46 Feb.
Ponková. Time of eruption of permanent teeth in the children of Czechoslovakia 29 Sept.

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Scopp. Dental extractions in patients undergoing anticoagulant therapy 35 Apr.
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Lehner. Analysis of one hundred cases of dry socket 33 Feb.

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Flory. Impacted supernumerary third molar: its removal with a unique elevator 15 Oct.
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Keil. Extraction of impacted lower cuspids 33 Feb.
Kilpatrick. Removal of impacted third molars using speeds up to 200,000 r.p.m. 13 Feb.

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Flory. Impacted supernumerary third molar: its removal with a unique elevator 15 Oct.

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Miller. Postextraction facial inflammation and edema treated by antibacterial drugs and streptokinase intramuscularly 12 Mar.
Postoperative complications in extraction of malposed teeth 6 Apr.
Sahl. Postextraction syncope and spasm following nitrous oxide administration 5 Mar.
Sellach. Trismus hystericus after extraction of deciduous molars: report of case 34 May

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Pathania. Facial hemiatrophy: a case report 44 May

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Hausser. Masticatory system and facial profile in teleroentgenograms 19 Apr.
Korkhaus. Development of the facial skeleton and its disturbances 37 June
Kraus. Heredity and the craniofacial complex 31 Sept.
Moore. Observations on facial growth and its clinical significance 12 Nov.
Scott. Studies in facial growth: the mandibular ramus and the teeth 50 Mar.
Wurmbach. Growth of the facial and cranial skeleton: the zoological viewpoint 35 June
Quinteros Ramirez. Federation of Dentists with a Free Practice 47 Oct.

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Ericsson. Autoradiographic investigations of the distribution of F^{18} in mice and rats 12 June
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Zipkin. Fluoride content of urinary and biliary tract calculi 50 Feb.

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Brunthaler. Improvement in torticollis after elimination of dental foci: report of case 22 Jan.
Murray. Explanation of the pathogenesis, physiology and therapy of Meniere's disease 27 Jan.
Oravecs. Foci of infection in the deciduous dentition of the school children of the City of Pecs, Hungary 39 Apr.

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Schwartz. Magnetic instrument for the recovery of broken curette fragments and other steel foreign bodies 35 Jan.

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Evdokimov. Extraction of a tooth situated on the line of fracture 32 Aug.
Hendrix. Open reduction of mandibular condyle: a clinical and experimental study 12 Oct.
Mathis. Treatment of fractures in edentulous jaws 6 Mar.
Piemonte. Internal wire immobilization in fractures of the jaws 12 Oct.
Schedel. Internal fixation of jaw fractures with "Supramid" slings 26 June
Szmyd. Air evacuation of maxillofacial patients 23 June
Tebo. Dental service utilization of orthopedic brace shop facilities 11 Feb.; Personality characteristics of patients treated in a Veterans Administration Hospital for fractures of the maxilla and mandible 25 June

Wright. Use of stainless steel pins to strengthen amalgam restorations 27 June

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Bassmann. Stabilization of surgical cement packs after frenectomy 35 Aug.

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Franke. Periodontics and gerontology 13 Dec.
Herzberg. Relationship of age to pain in dental operative procedures with rotating instruments 23 Mar.
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Seldin. Geriatrics in reverse 58 Apr.
White. Our ageing population 53 Oct.

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Nevin. Availability of bacterial growth factors in human gingival tissue 51 Jan.
Schultz-Haudt. Observations of the acid mucopolysaccharides of human gingiva 49 Feb.

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Coxhead. Periodontal survey 27 Sept.
Leonhardt. Chronic marginal gingivitis: its treatment in dental practice 33 June
Schwarzkopf. Gingivitis produced by calculus accumulation: report of case 32 June
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Schaffer. Cartilage grafts in human periodontal pockets 36 Mar.

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Bolton. Disharmony in tooth size and its relation to the analysis and treatment of malocclusion 7 Jan.
Brodie. Growth aspects in the diagnosis of malocclusion 9 Feb.
Hausser. Masticatory system and facial profile in teleroentgenograms 19 Apr.
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Meredith. Relation of the nasal and subnasal components of facial height in childhood 20 Mar.
Moorrees. Growth changes of the dental arches–a longitudinal study 9 Feb.
Orlik-Grzybowska. Orthodontic diagnosis 7 July
Smeets. Importance of apical base in orthodontics 19 Mar.
Picard. Bottle feeding as preventive orthodontics 3 Nov.
Schwarz. Human dentition in teleroentgenograms 7 Nov.

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Lieberman. Syndrome of acute osteomyelitis of the superior maxilla in early infancy 41 Nov.
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Jensen. Study of the bacterial flora of the gingiva in various periodontal diseases 23 Feb.
Mugnier. Mycologic research on "pyorrhea" 17 May
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Zerosi. Early tooth splinting in instances of periodontal disease 37 Mar.
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Kluczka. Classification of periodontal splints and their indication 26 Oct.
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Sicher. Changing concepts of the supporting dental structures 4 Sept.

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Bloomer. Speech as related to dentistry 59 May
Lillywhite. Manual of speech disorders 58 Jan.
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Randall. Simplified X-ray technique for the study of soft palate function in patients with poor speech 15 Feb.

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McKay. Poliomyelitic paralysis of fifth cranial nerve 39 Apr.
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Holgate. Accumulation of strontium-90 in dental tissues 48 June
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Khalifah. Teeth and strontium 90: the story behind the baby tooth survey 56 Nov.
Murai. Effect of irradiation on the developing permanent tooth of the young cat 8 June
Steadman. Distribution of strontium in teeth from different geographic areas 47 May
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Gorson. Limited survey of radiation exposure from dental X-ray units 7 Aug.
Richards. Study of radiation exposure in the private dental office 44 Mar.
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Poppe. Some comments on the health aspects of roentgen diagnosis in dentistry 15 Feb.
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Kerr. Antibacterial factors in the secretions of human parotid and submaxillary glands 49 Nov.
Muracciole. pH of saliva in healthy persons and in patients with dental caries and periodontosis 34 Jan.
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Steadman. Distribution of strontium in teeth from different geographic areas 47 May

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Kahler, J. E. 32 Mar.
Kallman, Robert F. 46 Mar.
Kalowski, Miron 48 Nov.
Kämmer, Siegbert 37 Sept.
Karte, Helmut 22 Oct.
Karwetzky, Rudolf 26 Aug.
Kato, Kyuji 14 Jan.
Keats, Arthur S. 34 Feb.
Keesling, Robert 34 Feb.
Keil, A. 33 Feb.; 8, 57 Aug.
Kellner, E. 16 June
Kerebel, Bertrand 47 June
Keresztury, S. 47 July
Kernahan, Desmond A. 23 July
Kerr, A. C. 49 Nov.
Kerr, Donald A. 9 July
Kessel, I. 38 Apr.
Khalifah, E. S. 56 Nov.
Kikuchi, Atsuschi 8 June
Killian, Hans 22 Mar.
Kilpatrick, H. C. 13 Feb.
Kimmel, Karlheinz 55 Apr.
King, H. Allen 40 Apr.
Kirsch, Th. 6 Apr.
Klees, Katia 43 Nov.
Klees, Louis 30 Oct.; 43 Nov.
Kleinberg, I. 13 Sept.
Kluczka, Josef 26 Oct.
Knight, J. S. 33 Aug.
Knijnikov, V. A. 20 Nov.
Knoedler, David 58 May
Knott, Virginia B. 20 Mar.
Koch, F. 29 Dec.
Koehler, Henry M. 4 Mar.
Koerner, T. A. 40 Apr.
Kohlschmid, A. 57 July
Kohn, Henry I. 46 Mar.
Koivumaa, K. K. 30 Mar.; 34 Sept.
Kolle, Kurt 48 Apr.
Kominek, J. 27 Apr.; 29 Aug.
Kominková, O. 29 Aug.
Koninska, D. 54 Apr.
Korkhaus, Gustav 37 June
Korth, W. 43 Mar.
Koscár, L. 49 Jan.
Koski, Kalevi 44 Apr.
Kovacs, Imre 12 Aug.
Kovács, Zoltán 3 Jan.
Kowalski, Edward 4 Nov.
Kragh, Lyle V. 38 Aug.
K[illegible]jnik, J. 9 Sept.
Krakow, Alvin A. 40 June
Krantz, Simon 31 Jan.
Krarup, Bent 36 Apr.
Krasner, Herbert A. 5 Mar.
Krasse, Bo 14 Mar.
Kraus, Bertram S. 31 Sept.
Krauspe, Carl 30 Apr.
Krenar, J. 28 Aug.
Krikos, George A. 48 Mar.
Krippaehne, William 56 Apr.
Krohn, Samuel 34 June
Kronke, A. 25 Feb.
Krook, Gösta 39 Aug.
Kruczkowska, Maria 26 Apr.
Kruger, B. J. 45 May; 20 Nov.
Kruisbrink, J. J. 10 Apr.
Kruse, Helmut 41 May
Krylova, O. P. 48 Nov.
Kubelka, D. 27 Apr.
Kukidome, Kazuhiro 44 Jan.
Kunváry, Bella 10 May
Kuppermann, H. S. 37 Mar.
Kurtz, H. M. 51 Jan.
Kutscher, Austin H. 55 Feb.; 13 Apr.; 30 Dec.

L

Laborde, Simone 25 July
Lafon, H. 40 Sept.
Lambert, R. 41 Oct.
Lammie, G. A. 19 Aug.
Lange, F. 47 June
Langeland, Kaare 47 Mar.
Larson, Duane L. 29 Nov.
Larsson, P. G. 42 May
Lash, Harvey 33 Nov.
Latsch, G. 56 Jan.
Lawrence, W. N. 51 Feb.
Leaver, Robert 38 May
Lee, W. A. 37, 50 Feb.
Lee, William L., Jr. 9 June
Leech, H. L. 24 Aug.
Lehner, T. 33 Feb.
Lenz, Hans 14 Apr.; 28 Oct.; 26 Dec.
Leone, N. C. 36, 37, 50 Feb.
Leonhardt, Horst 33 June
Lepp, F. H. 32 Feb.
Letowska, Zofia 8 June
Leung, S. W. 34 Nov.
Leupold, E. 46 Apr.
Levin, Bert J. 45 Apr.
Levin, Harry L. 3 July
Levine, David 33 Nov.
Levine, Phillip J. 27 Feb.
Levrat, M. 41 Oct.
Levy, Barnet M. 51 Jan.
Lewis, Arthur B. 44 Apr.; 14 Aug.
Lewis, John D. 23 Dec.
Lewis, Thomas E. 4 Nov.
Li, Choh-Luh 12 Feb.
Lieberman, Harold 41 Nov.
Lieberman, J. 36, 37 Feb.; 7 Aug.
Lighterman, Irwin 17 June
Lillie, R. D. 10 Sept.
Lillywhite, Herold 58 Jan.
Lind, Volmer 5 Nov.
Lindahl, Bengt 41 Apr.
Lindblom, G. 5 May
Lindell, Bo 16 Feb.
Lindner, D. W. 33 Sept.
Linell, F. 8 Mar.
Linghorne, W. J. 13 Mar.
Link, William J. 58 Nov.
Lisanti, Vincent F. 13 Sept.
Little, M. F. 45 Nov.
Looby, John P. 36 Sept.
Lorenz, O. 46 June
Loretz, Wayne W. 44 Mar.
Lovdal, Arne 23 Feb.
Lövedal, Arne 5 Oct.
Lovino, Michele 42 Apr.
Lowell, Richard J. 30 Aug.
Ludwig, T. G. 45 Sept.
Luks, Samuel 29 June
Lundberg, M. 6 Aug.
Lundervold, Arne 12 Feb.
Lundquist, Donald O. 20 Aug.
Luther, H. G. 34 Oct.
Lynam, William A. 55 Feb.
Lyon, Harvey W. 34 July
Lysell, Lennart 17 Apr.

M

MacDonald, J. B. 17 Mar.
Macher, E. 38 Sept.
Magnin, Jules 26 Apr.
Magnusson, Bertil 37 May
Magud, E. A. 28 May
Mahler, Walter 4 Mar.
Mahrer, P. R. 40 Oct.
Malone, James L. 45 Nov.
Mandel, Irwin D. 51 Jan.
Marevskaya, A. P. 30 May
Marken, K. E. 6 Aug.
Marquès, P. 18 Feb.
Marsland, Edward A. 39 Jan.
Martin, W. J. 42 Oct.
Maslinkov, D. 44 Sept.
Mason, A. A. 54 Feb.; 51 Sept.
Massalska, B. 54 Apr.
Masters, Donald H. 41 Aug.
Masterson, Dean W. 36 Oct.
Mathis, Hermann 6 Mar.; 41 May
Matussek, Bernhard 4 July
Maunsbach, A. B. 18 Dec.
McAndrew, J. R. 31 Mar.
McAtee, W. Peter 36 July
McBride, T. F. 58 Sept.
McCall, C. M., Jr. 23 June
McClure, F. J. 37 Feb.
McCracken, William L. 3 Oct.
McElroy, Donald L. 44 Jan.
McGrath, D. J. 38 Oct.
McHugh, William D. 28 Apr.
McKay, Charles 39 Apr.
McKay, Robert C. 44 July
McMahon, Charles A. 23 Dec.
McNamara, Robert L. 6 Dec.
Mead, Sterling G. 24 Jan.
Mehnert, Herbert 35 May
Meilach, Dona Z. 55 May
Mellor, W. C. 35 Mar.
Melnivov, R. A. 24 Dec.
Mena Serra, Raul 40 Aug.
Menczer, Leonard F. 46 Aug.
Menéndez, O. R. 53 Nov.
Mensh, Maurice 24 Jan.
Mercadante, James 13 Apr.
Meredith, Howard V. 20 Mar.
Meredith, W. J. 16 Oct.
Mergenhagen, S. E. 51 Mar.
Messing, J. J. 28 June
Meyer, George 21 Nov.
Michael, E. 40 May
Michalowski, Roman 24 Oct.
Michnevičová, A. 42 Aug.

Miksa, J. 50 May
Miles, A. E. 49 Aug.
Miles, A. E. W. 31 May; 54 Sept.
Millard, D. Ralph, Jr. 8 Oct.
Miller, Horace M. 8 Apr.
Miller, John 18 Nov.
Miller, Joseph M. 12 Mar.
Miller, Pamela 18 Nov.
Miller, S. C. 36 Jan.; 37, 38 Mar.
Milodrowska, Maria 16 July
Miselli, L. 40 July
Modell, Walter 42 Mar.
Mole, R. H. 48 June
Molhuysen, J. A. 22 Feb.
Mona, Joseph O. 36 Sept.
Monheim, Leonard M. 46 Jan.
Montane Laredo, Felipe 52 Oct.
Monteleone, Louis C. 35 Feb.
Moore, Alton W. 12 Nov.
Moore, J. R. 33 Aug.
Moorrees, C. F. A. 9 Feb.
Morani, Alma Dea 21 July
Moretti, G. 21 June
Morgenroth, K. 6 Sept.; 32 Nov.
Morris, Alvin L. 48 Mar.
Morris, David 46 Feb.
Morris, Donald H. 43 July
Morris, George E. 58 Apr.
Morris-Owen, R. M. 41 Feb.
Morvay, Leonard S. 57 June
Moshonas, Manuel G. 23 Mar.
Moss, Melvin L. 21 July
Mounier-Kuhn, P. 40 Sept.
Mourfield, W. R., Jr. 14 Jan.
Mueller, William S. 50 May
Mugnier, A. 17 May
Muhler, Joseph C. 40 Feb.; 15 June; 41 Aug.; 14 Dec.
Müller, E. 33 Mar.
Müller, Walther 22 Jan.; 17 Feb.; 14, 29 May; 44 Oct.
Mumford, J. M. 16 Aug.
Münnich, Arno 14 Feb.
Muracciole, Juan C. 34 Jan.; 40 Feb.
Murai, Takeo 8 June
Murphy, T. 49 Mar.
Murray, Maynard 27 Jan.
Mushin, William W. 47 Jan.
Myers, H. I. 6 June
Myers, Lester E. 41 Mar.
Myerson, Mervin C. 42 Aug.

N

Nagelschmit, W. F. 40 Oct.
Nakamura, Tadashi 8 June
Nash, Andreas 36 Jan.
Neal, Joe G. 32 July
Neill, D. J. 29 Mar.
Neufeld, John O. 48 Feb.
Neumann, H. 40 Jan.
Neuner, Otto 6 July
Nevin, T. A. 51 Jan.
Nevitt, George A. 50 Apr.; 46 Oct.
Newbrun, Ernest 43 Oct.
Newcomb, Morse R. 8 Jan.
Nicolas, Georges 58 May
Nihei, Ichiro 52 Oct.
Nikolaev, N. V. 28 May
Nitsche, Hermine 44 Mar.
Nord, Ch. F. L. 23 Aug.
Norris, Paul E. 26 Aug.
Nyborg, Hilding 12 July
Nyul, L. 42 Mar.

O

Oberbreckling, R. E. 20 Sept.
Oberto, William T. 41 Sept.
Oehme, J. 25 Jan.
O'Hara, A. Edward 15 Feb.
Oksala, O. 44 May
Olow, Märta 37 Apr.
Olvén, Sölve 35 May
Omnell, Karl-Ake 41 Apr.
Oravecs, Paul 39 Apr.
Orlik-Grzybowska, A. 7 July
Ormes, Walter M., Jr. 3 Feb.
Orsós, S. 47 July
Ortel, S. 35 Oct.

P

Padley, Richard 45 Oct.
Paffenbarger, George 4 Feb.; 20 Oct.
Pallette, E. C. 32 Mar.
Panconcelli-Calzia, G. 55 June; 28 Dec.
Pathania, Nasib Singh 44 May
Pavlovici-Ghinea, M. 31 Mar.
Pavsek, Edward J. 31 Feb.
Payen, J. 36 Apr.
Paynter, K. J. 18 Apr.; 26 Oct.
Peck, A. W. 33 Sept.
Peck, George C. 37 Nov.
Peer, Lyndon A. 37 Nov.
Persson, Per-Allan 28 Apr.
Perzik, Samuel L. 16 Feb.
Pesková, H. 26 Nov.
Petrie, Myra J. 19 Jan.
Pettinari, V. 6 May
Peyton, F. A. 51 Feb.; 55 Mar.
Pfaltz, C. R. 25 Nov.
Pfannenstiel, Günter 43 Feb.
Pflüger, H. 23 May
Phillips, Ralph W. 10 Jan.; 5 Apr.; 18 July
Picard, Peter J. 3 Nov.
Pickrell, Kenneth 34 Apr.
Piemonte, Mauro 12 Oct.
Pigman, Ward 43 Oct.
Pike, E. B. 48 May
Pimenova, A. M. 8 May
Pindborg, J. J. 40, 49 July
Ping, Ronald S. 33 Jan.
Piro, John D. 13 Apr.
Pirruccello, F. W. 23 Jan.
Polacheck, D. L. 44 Apr.; 14 Aug.
Pond, M. H. 53 May
Ponková, V. 47 May; 29 Sept.
Poole, Lynn 8 Mar.
Popesco, Valerian 31 Mar.
Poppe, Erik 15 Feb.
Port, T. 30 May
Porter, Kendall 40 Aug.
Pressman, R. S. 19 May
Price, K. E. 34 Oct.
Prokhonchukov, A. A. 39 Sept.
Proskauer, Curt 44 Feb.; 53 July
Provenza, D. Vincent 30 June
Pudy, G. 18 Apr.
Pybus, F. C. 18 Nov.

Q

Quinteros Ramírez, R. 47 Oct.

R

Raffetto, Edward C. 3 Mar.
Rákosi, T. 4 Jan.
Randall, Peter 15 Feb.
Rant, J. 48 Oct.
Rantanen, Aimo V. 53 Nov.
Rath, Gernot 50 June; 8 Dec.
Ray, E. S. 28 Mar.
Ray, G. E. 13 Nov.
Ray, Harold G. 48 Oct.
Redish, C. H. 33, 48 Jan.
Redpath, George W. 52 Sept.
Reginato, L. E. 42 Nov.
Reiners, E. M. 51 July
Reiser, Hans Erich 36 Oct.
Reither, Werner 10 Dec.
Rentchnick, P. 32 Jan.
Rentschler, E. H. 5 May
Reppert, Harold C. 56 Jan.
Rheinwald, Ulrich 37 Sept.
Rhoads, Paul S. 56 Sept.
Rice, F. Bruce 45 Oct.
Richard, Frederick 34 Apr.
Richards, Lloyd F. 44 Mar.
Richie, Eleanor L. 43 Oct.
Riebel, Frank A. 13 Apr.
Rinderer, L. 50, 51 Aug.
Ritchie, James 48 Aug.
Ritter, S. 37 Apr.
Roberts, A. C. 7 May
Robinson, John E. 57 May
Röckert, Hans 50 Feb.
Röckl, H. 33 Mar.
Roderick, J. F. 4 Aug.
Rosemblit, E. 40 May
Rosevear, Francis B. 46 May
Ross, I. F. 37 Mar.
Rost, G. A. 8 Sept.
Roswit, Bernard 21 Nov.
Rothman, Martin 55 Feb.
Rowe, F. D. 8 Feb.
Roy, R. 10 Jan.
Rozkovcová, E. 27 Apr.
Rudinu, Ivaldo 38 May
Rudolph, C. E., Jr. 43 Jan.
Runald, Martin 18 Dec.
Rusk, Howard A. 44 Aug.
Rusu, M. 42 Oct.
Ruther, H. 56 Oct.
Ryge, Gunnar 20 Sept.

S

Sahl, H. A. 5 Mar.
Salley, John J. 24 Dec.
Salzer, Harry M. 42 Sept.
Sanders, Lincoln E. 11 Apr.
Sanders, S. G. 12 Oct.
Sandler, Henry C. 28 Apr.
Santagati, Francesco 15 Dec.
Sarnat, Bernard G. 31 Feb.
Sassouni, Viken 39 Nov.
Sato, Mamoru 22 Aug.
Schaffer, Erwin M. 36 Mar.
Schatten, William E. 24 Jan.
Schautz, Rudolf 43 Nov.
Schedel, F. 26 June
Scheinin, Arje 31 Oct.
Schel, Olav 23 Feb.
Scherer, E. 18 Oct.
Schmidt, Erwin R. 38 Oct.; 29 Nov.
Schmidt, H. J. 45 Feb.
Schmunis, A. 15 Mar.; 35 Sept.
Schnaidt H., Otto 5 Oct.
Schneider, Bernard 32 Apr.
Schneider, Paul 25 Nov.
Schnell, Richard J. 10 Jan.
Schoeffler, A. 36 Mar.
Schranz, D. 40 Nov.
Schrire, T. 18 June
Schröder, Friedrich 6 May
Schrudde, J. 26 Nov.
Schultz-Haudt, S. D. 49 Feb.
Schwab, Norbert 55 Oct.
Schwartz, J. Leon 4 Dec.
Schwartz, Murray 35 Jan.
Schwartzkopf, H. 32 June
Schwarz, A. Martin 7 Nov.
Schweizer, Henry C. 46 May
Scigliano, John 17 May
Scofield, H. H. 15 Jan.
Scopp, Irwin Walter 50 Jan.; 35 Apr.
Scott, Frank T. 45 July

Scott, James H. 51 Feb.; 50 Mar.
Scott, T. F. McNair 43 May
Seidner, Siegfried 6 Oct.
Seifert, G. 25 Jan.
Seifert, Omar M. 50 Apr.
Seith, F. W. 44 Aug.
Seldin, Jules B. 58 Apr.
Sellach, Joachim 34 May
Semjan, M. 16 Nov.
Senter, Alvin D. 13 Dec.
Sesto, John, Jr. 56 Oct.
Shafer, William G. 15 June; 41 Aug.
Shaffer, Joseph I. 56 Jan.
Shannon, Ira L. 39 Feb.
Sharma, K. D. 36 Aug.
Sharpenak, A. E. 28 May
Sharry, John J. 15 Sept.
Shaw, James H. 44 Sept.
Ship, I. I. 18 June
Shovelton, David S. 39 Jan.
Shrivastav, J. B. 36 Aug.
Shvartsman, M. S. 50 Nov.
Sicher, Harry 32 Apr.; 4 Sept.
Siegal, Sheppard 22 Sept.
Siemens, Marguerite 57 Oct.
Sikroria, K. C. 37 Aug.
Silvers, Herbert F. 30 Dec.
Simon, S. William 23 Sept.
Simpson, H. E. 30 Feb.; 12 Mar.; 20 Dec.
Siwe, Hans 5 Nov.
Skach, M. 42 Aug.
Skinner, C. N. 36 Nov.
Skládal, J. 22 June
Skorobogatko, V. Z. 33 May
Slack, Geoffrey L. 51 May; 11 July; 42 Oct.
Sloan, Donald G. 3 Dec.
Smeets, H. J. L. 19 Mar.
Smith, D. B. 52 July
Smith, D. C. 20 Sept.
Smith, Frank A. 47 May
Smith, Guy W. 41 Sept.
Sognnaes, R. F. 21, 56 Feb.
Solomon, Alvin L. 30 Aug.
Soule, A. Bradley, Jr. 24 July
Speirs, R. L. 13 Sept.
Sperber, G. H. 47 Nov.
Spies, H. C. 18 Nov.
Spring, Paul N. 51 Nov.
Squires, Bernard T. 29 Jan.
Srivastava, S. P. 37 Aug.
Stack, M. V. 12 Dec.
Stadnicki, J. 9 Sept.
Stahl, André 12 Apr.
Stahl, S. S. 36 Jan.; 24 Feb.; 28 Apr.
Stahle, Jan 35 May
Stanford, John W. 20 Oct.
Stanmeyer, William 58 May; 57 Aug.
Stark, Richard B. 23 July
Staz, J. 10 July
Steadman, Luville T. 47 May
Steenbergen, J. 22 Feb.
Steffensen, J. C. A. 33 May
Steinman, Ralph R. 45 May
Stelling, Em. 15 Mar.
Stellmach, R. 26 Nov.
Stewart, D. J. 17 July
Stewart, William R. 27 Jan.
Stick, W. 38 May
Stockdale, C. R. 35 Mar.
Stocker, R. B. D. 52 May
Storer, Roy 21 May
Storer, R. 19 Aug.
Storm, K. 49 Oct.
Stransky, D. 44 Sept.
Straub, Walter J. 21 Apr.
Straus, W. L., Jr. 39 Nov.
Strean, Lyon P. 37 Nov.
Struzak-Wysokinska, M. 11 Oct.
Sturgeon, L. W. C. 19 Nov.
Sturmer, F. C., Jr. 32 June
Suben, E. 28 Apr.
Sullivan, H. R. 34, 48 Jan.; 48 May; 18 Nov.
Sundling, Harry 21 Mar.
Surmonte, John A. 12 Mar.
Sveda, Josef 34 May
Svejda, J. 47 May
Swan, Robert W. 27 Oct.
Swartz, Marjorie L. 5 Apr.; 18 July
Swartz, Walter H. 35 Nov.
Sweeney, W. T. 47 Apr.; 4 Oct.
Sweet, A. Porter S. 3 Sept.
Swenson, Henry M. 31 Nov.
Symons, N. B. B. 49 Feb.
Szmyd, Lucian 23 June

T

Taft, Leo 45 Mar.
Taillens, J. P. 40 Apr.
Tammisalo, E. 49 Oct.
Tarrow, Arthur B. 9 June
Tascher, Paul J. 38 Jan.; 15 May; 54 Nov.
Tashman, Sylvia G. 19 May
Taubert, G. 17 June
Taviani, S. 49 Mar.
Taylor, G. W. 18 June; 24 Sept.
Tebo, Heyl G. 11 Feb.; 25 June
Tempest, Michael N. 13 Feb.
ten Henkel, H. 49 July
Teulie, S. 11 Sept.
Thayer, Keith E. 16 Sept.
Theilade, Jørgen 6 Feb.
Themann, Hermann 48 June; 6 Sept.
Thoma, Kurt H. 46 July
Thomason, J. Harold 46 Jan.
Thompson, Henry A. 13 Mar.
Thompson, Peter W. 47 Jan.
Thörne, Hugo 23 Oct.
Thornton, K. R. 25 Sept.
Timberlake, Philip 43 Oct.
Tocchini, John 13 May
Tomek, S. 32 May
Toto, Patrick D. 38 Nov.
Toverud, Guttorm 20 Jan.
Townend, B. R. 22 Oct.
Trainin, Boris 5 June
Trieger, N. 18 June; 24 Sept.
Trotman, C. G. 55 Sept.
Trott, J. R. 20 Feb.
Truelove, S. C. 41 Feb.
Trummert, W. 23 Jan.
Tsaturov, V. L. 52 Feb.
Tuckerman, Murray M. 30 Aug.
Tuft, Louis 46 Nov.
Tuoti, Ferdinand 13 Apr.
Turell, Julio C. 31 June
Turusbekov, B. T. 52 Jan.

U

Ugolev, A. M. 34 Jan.
Ujhelyi, Francesco 37 Oct.
Ulik, R. 22 July
Ullberg, Sven 12 June
Unger, Sol M. 21 Nov.
Updegrave, W. J. 56 Jan.

V

Valento, S. E. 32 July
Valenzuela Alarcón, J. E. 17 Sept.
Vályi, Edith 44 Mar.
Van Dellen, T. R. 37 Aug.
van der Linden, F. P. 3 May
van der Plaats, G. J. 7 June
van der Woerd, D. J. A. 57 June
van Du Wast, W. A. M. 32 June
van Haeringen, W. 57 Mar.
Vannotti, A. 8 Sept.
Van Slyke, C. J. 58 Oct.
Vaughan, Janet 48 June
Vinduska, J. 32 Mar.
Vinson, P. P. 28 Mar.
Visser, J. B. 57 Mar.
Vlček, V. 42, 55 Aug.
Vogel, Fredrich 36 Oct.
Volker, J. F. 52 Jan.; 29 July
Vondra, J. 32 Mar.
von Kreudenstein, Th. 12 Sept.
Vore, Robert E. 48 Jan.
Vyklicky, L. 47 Feb.

W

Wach, Edward C. 44 Jan.
Waerhaug, Jens 23 Feb.; 5 Oct.
Wagner, J. M. 38 Apr.
Wagner, William A. 13 Mar.
Wais, F. T. 43 Jan.
Walker, John C. 37 Nov.
Walstam, Rune 16 Feb.
Walter, Clifton I. 15 Dec.
Walthard, B. 46 Mar.
Ward, Richard J. 9 June
Warkany, Josef 48 July
Washburn, S. L. 38 July
Wasserman, B. H. 51 Jan.
Waterman, George E. 54 Feb.
Weber, A. 54 Oct.
Webster, J. E. 33 Sept.
Wedderburn, D. L. 49 Nov.
Weins, Gerd 16 Dec.
Weisberger, D. 18 June; 24 Sept.
Weitgasser, H. 56 Aug.
Wells, Jack E. 51 May
Wellwood, E. M. 50 Oct.
Wendel, K. 26 Jan.
Werner, Ivar 20 Jan.
Westmoreland, W. W. 44 Mar.
Whitcher, H. W. 55 Sept.
White, Eli E., Jr. 23 Mar.
White, Paul C. 52 Feb.
White, Philip H. 53 Oct.
Whitehead, Raymond 57 Apr.
Whiteside, Wilfred D. 28 July
Whitling, Ivor E. 48 Sept.
Wiel, Pierantonio 33 Mar.
Wilkinson, A. A. 11 Nov.
Willoughby, Dayton W. 23 Sept.
Winckler, J. 40 May
Winer, Richard A. 13 Sept.
Winniker, Michael 43 Sept.
Wise, William J. 31 Sept.
Witter, David H. 46 Oct.
Wolff, Harold G. 41 Nov.
Wong, Ka-Chor 14 Oct.
Woods, Robert W. 45 May
Woolcott, Richard 18 Dec.
Woolf, Robert 34 Apr.
Worner, Howard K. 56 Apr.
Wright, R. W. 27 June
Wurmbach, Hermann 35 June

Y

Yamamoto, Kazunari 42 Jan.
Yardley, R. Miller 58 Sept.

Z

Záhorová, L. 27 Apr.
Zamorano, Rosa E. 30 July
Zander, Helmut A. 38 Jan.; 3 Apr.; 15 Aug.
Zange, J. 34 Mar.
Zegarelli, E. V. 13 Apr.; 30 Dec.
Zellner, R. 39 May
Zemlyanitskaya, E. T. 45 May
Zerosi, Carlo 37 Mar.
Ziebe, Heinz 50 Mar.
Zimmer, E. A. 18 Feb.
Zimmerman, Donald C. 33 Aug.
Zingsheim, M. 57 Oct.
Zipkin, I. 37, 50 Feb.
Zolli, Z., Jr. 34 Oct.
Zubek, John P. 7 Dec.

LIST OF PERIODICALS ABSTRACTED

The periodicals from which abstracts were made and printed in Volume 4 of *Dental Abstracts* are listed below in the alphabetical order of their abbreviations. In addition the full title and address of each periodical are given.

Lists of all dental journals published in the United States and of dental journals published outside the United States and currently received in the Bureau of Library and Indexing Service of the American Dental Association are available free from that Bureau.

A.E.O.S.I. Associazione Europea Odontostomatologia per Gli Impianti. Clinica Odontoiatrica, University of Pavia, Italy.

A.M.A.Arch.Otolaryng. A.M.A Archives of Otolargyngology. 535 N. Dearborn St., Chicago 10, Ill.

A.M.A.Arch.Surg. A.M.A. Archives of Surgery. American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

Acad.Rev. Academy Review. California Academy of Periodontology, 530 Powell St., San Francisco 2, Calif.

Accepted Dental Remedies Accepted Dental Remedies. American Dental Association, 222 E. Superior St., Chicago 11, Ill.

Acta chir.& traum. Čechoslov. Acta chirurgiae orthopaedicae et traumatologiae Čechoslovaca. Sokolská 31, Prague, Czechoslovakia.

Acta chir.scandinav. Acta chirurgica Scandinavica. P. A. Norstedt & Söner, Tryckerigatan 2, Stockholm 2, Sweden.

Acta Med.scandinav. Acta Medica Scandinavica. Tryckerigantan 2, Stockholm 2, Sweden.

Acta odont.scandinav. Acta Odontologica Scandinavica. Skeppsbron 44, Stockholm C, Sweden.

Acta orthop.scandinav. Acta orthopaedica Scandinavica. Norregade 6, Copenhagen K, Denmark.

Acta radiol.,Stockholm Acta radiologica. Tryckerigatan 2, Stockholm 2, Sweden.

Actual.odontostomat.,Paris Actualités Odonto-Stomatologiques. 6, Rue de la Bûcherie, Paris 5, France.

Air Univ.School Aviat.Med. Air University, School of Aviation Medicine, U.S.A.F. Randolph Air Force Base, Texas.

Alpha Omegan Alpha Omegan. 329 Bloor St., West, Toronto 5, Canada.

Alum.Bul., Michigan Univ.School Den. Alumni Bulletin, School of Dentistry, University of Michigan. Ann Arbor, Mich.

Am.Ceramic Soc.Bul. American Ceramic Society Bulletin. 4174 High St., Columbus 14, Ohio.

Am.J.Clin.Nutrit. The American Journal of Clinical Nutrition. 49 W. 45th St., New York 36, N. Y.

Am.J.Orthodont. American Journal of Orthodontics. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo.

Am.J.Psychiatry The American Journal of Psychiatry. Official organ of the American Psychiatric Association, 10 Allen Street, Hanover, N. H.

Am.J.Pub.Health. American Journal of Public Health and the Nations Health. 374 Broadway, Albany 7, N. Y.

Am.J.Roentg. American Journal of Roentgenology, Radium Therapy and Nuclear Medicine. Charles C Thomas, publisher, 301 E. Lawrence Ave., Springfield, Ill.

Am.J.Surg. American Journal of Surgery. 49 W. 45th St., New York 36, N. Y.

An.cir. Anales de cirugía. Calle Paraguay 40, Rosario, Argentina.

Anaesthesist, Berlin Der Anaesthesist. Reichpietschufer 20, Berlin W. 35, Germany.

Anesth.& Analg. Current Researches in Anesthesia and Analgesia. Wade Park Manor, E. 107th & Park Lane, Cleveland 6, Ohio.

Anat.Record Anatomical Record. Wistar Institute, 36th St. and Woodland Ave., Philadelphia 4, Pa.

Anesthesiology Anesthesiology. American Society of Anesthesiologists, 3 Penn Center Plaza, Philadelphia 2, Pa.

Angle Orthodont. Angle Orthodontist. Zuelke Bldg., Appleton, Wis.

Ann.med.exp.biol.fenn. Annales medicinae experimentalis et biologiae Fenniae. Yrjönkatu 17, Helsinki, Finland.

Ann.otolaryng. Annales d'Oto-Laryngologie. Masson & Cie., 120 Boulevard Saint-Germain, Paris 6, France.

Ann.stomat.,Roma Annali di Stomatologia. Viale Regina Margherita 287-B, Rome, Italy.

Arch.Cuban.cancer. Archivos Cubanos de cancerologia. Calle 21, Vedado, Havana, Cuba.

Arch.Geschwulstforsch. Archiv für Geschwulstforschung. Theodor Steinkopff Verlag, Loschwitzerstrasse 32, (10a) Dresden A 53, Germany.

Arch.Ital.chir. Archivio Italiano di chirurgia. Via Farini 6, Bologna, Italy.

Arch.Ital.path.clin.tumori. Archivio Italiano di patologia e clinica tumori. Via Farini 6, Bologna, Italy.

Arch.klin.Chir. Archiv für klinische Chirurgie (formerly Deutsche Zeitschrift für Chirurgie). Reichpietschufer 20, Berlin W 35, Germany.

Arch.stomat,Liège Archives de Stomatologie. 11-15, Rue de la Commune, Liège, Belgium.

Arizona D.J. Arizona Dental Journal. 17 E. Weldon, Phoenix, Ariz.

Ärztl.Wschr. Ärztliche Wochenschrift. Reichpietschufer 20, Berlin W. 35, Germany.

Atti Soc.med. Bolzano Atti della Società medica di Bolzano. Ospedale Civile, Bolzano, Italy.

Austral.D.J. Australian Dental Journal. 135 Macquarie St., Sydney, Australia.

Baylor D.J. Baylor Dental Journal. Baylor University College of Dentistry, Dallas, Texas.

Bl.Zahnhk.,Zürich Blätter für Zahnheilkunde. Stauffacherstrasse 3, Zurich, Switzerland.

Bol.Col.estomat.Guatemala Boletin del Colegio Estomatologico de Guatemala. 4a Calle 0-51, Guatemala City, Guatemala.

Bratisl.Lekar.Listy Bratislavské Lekárske Listy. Slovenska Akademia Vied, Klemensová 27, Bratislava, Czechoslovakia.

Brit.D.J. The British Dental Journal. 13 Hill St., Berkeley Sq., London W. 1, England.

Brit.J.Ophth. British Journal of Ophthalmology. Tavistock Sq., London W. C. 1, England.

Brit.J.Plast.Surg. British Journal of Plastic Surgery. 16-17 Teviot Place, Edinburgh, Scotland.

Brit.M.J. British Medical Journal. British Medical Association, Tavistock Sq., London W. C. 1, England.

Bul.Am.A.Pub.Health Den. Bulletin of the American Association of Public Health Dentists. 2411 N. Charles St., Baltimore 18, Md.

Bul.Exper.Biol.& Med., USSR Bulletin of Experimental Biology and Medicine. Consultants Bureau Inc., 227 W. 17th St., New York 11, N. Y.

Bul.Greater Milwaukee D.A. Bulletin of the Greater Milwaukee Dental Association. Plankinton Bldg., Suite 4130-32, 161 W. Wisconsin Ave., Milwaukee 3, Wis.

Bul.Oral Path., Tokyo Bulletin of Oral Pathology. Tokyo Dental College, Tokyo, Japan.

Bul.Tokyo M.D.Univ. Bulletin of Tokyo Medical & Dental University. Bankyo-Ku, Tokyo, Japan.

Cah.odontostomat.,Marseille Cahiers Odonto-Stomatologiques. 17, Montée des Accoules, Marseilles 2, France.

Calif.Med. California Medicine. California Medical Association, 450 Sutter St., San Francisco, Calif.

Canad.J.Pub.Health Canadian Journal of Public Health. Canadian Public Health Association, 150 College St., Toronto 5, Ontario, Canada.

Cancer Cancer. East Washington Sq., Philadelphia 5, Pa.

Cancer Bul. Cancer Bulletin. 2310 Baldwin St., Houston, Texas.

Časop.lék.česk. Časopis Lékaru Českych. Čis. 43, Strana 1365-88, Prague 1, Czechoslovakia.

Central African J.Med. Central African Journal of Medicine. P.O. Box 2073, Salisbury, S. Rhodesia, Africa.

Českoslov.Roentgenol. Československá Roentgenologie. Sokolská 31, Prague 2, Czechoslovakia.

Českoslov.stomat. Československa stomatologie. Krakovská 8, Prague 2, Czechoslovakia.

Chicago Tribune Chicago Tribune. Tribune Square, Chicago 11, Ill.

Chirurg Chirurg. Reichpietschufer 20, Berlin W. 35, Germany.

Chirurgie Die Chirurgie, Zeitschrift für alle Gebiete der operativen Medizin. Reichpietschufer 20, Berlin W. 35, Germany.

Chron.Omaha Dist.D.Soc. Chronicle of the Omaha District Dental Society. 939 Medical Arts Bldg., Omaha 2, Neb.

Chron.WHO Chronicle of the World Health Organization. Palais des Nations, Geneva, Switzerland.

CIBA Symp. CIBA Symposium. CIBA Ltd. Basel, Switzerland.

Cien.y Cult. Ciencia y Cultura. Revista de la Universidad Nacional, Zulia, Venezuela.

Clin.Med. Clinical Medicine. P. O. Box M, Winnetka, Ill.

Czas.stomat. Czasopismo Stomatologiczne. Ul. Filtrowa 30, III pietro, Zaklad Protetyki, Warsaw, Poland.

D.Assist. Dental Assistant. American Dental Assistants Association, 1103 Grovewood Drive, Houston 8, Texas.

D.Dienst Dental Dienst. Schillerplatz 20, Bielefeld, Germany.

D.Echo, Heidelberg Dental Echo. Ladenburger Strasse 67, Heidelberg 17a, Germany.

D.Health Memo.,USPHS Dental Health Memorandum. U. S. Public Health Service, Washington 25, D. C.

D.Mag.& Oral Topics Dental Magazine and Oral Topics. 26-40 Broadwick St., London W. 1, England.

D.Practitioner The Dental Practitioner and Dental Record. John Wright & Sons Ltd., Bath Rd., Bristol 4, England.

D.Radiog.& Photog. Dental Radiography and Photography. 343 State St., Rochester 4, N. Y.

D.Technician The Dental Technician. 331 Gray's Inn Rd., London W.C. 1, England.

Dermat.Wschr. Dermatologische Wochenschrift. J. A. Barth, Salomonstrasse 18b, Leipzig C. 1, Germany.

Deut.med.Wschr. Deutsche Medizinische Wochenschrift. Herdweg 63, Stuttgart, Germany.

Deut.Stomat. Deutsche Stomatologie. Neue Grünstrasse 18, Berlin C. 2, Germany.

Deut.Zahnärzte Kal. Deutscher Zahnärzte Kalender. Carl Hanser Verlag, Munich, Germany.

Deut.Zahnärztebl. Das Deutsche Zahnärzteblatt. Lazarettstrasse 2-6, Munich 2, Germany.

Deut.zahnärztl.Zschr. Deutsche Zahnärztliche Zeitschrift. Martiusstrasse 3, Munich 23, Germany.

Du Pont Mag. Du Pont Magazine. E. I. du Pont de Nemours & Co., Wilmington 98, Del.

Eye, Ear, Nose & Throat Monthly Eye, Ear, Nose and Throat Monthly. Professional Press, Inc., 5 North Wabash Ave., Chicago 2, Ill.

Fogorv.szemle Fogorvosi Szemle. Múzeum Körút 39, Budapest 5, Hungary.

Fortschr.Kief.Ges.Chir. Fortschritte der Kiefer- und Gesichts-Chirurgie. Herdweg 63, Stuttgart N. (14a), Germany.

Fortschr.Kieferorthop. Fortschritte der Kieferorthopädie. Zitelmannstrasse 16, Bonn, Germany.

Fortschr.Röntgenstr.Nuklearmed. Fortschritte auf dem Gebiete der Röntgenstrahlen und der Nuklearmedizin. Herdweg 65, Stuttgart N., Germany.

Geistig.Kapital Das Geistige Kapital, Monatsblätter für die Freien Berufe. Melchiorstrasse 14, Cologne, Germany.

Gior.ital.chir. Giornale Italiano di Chirurgia, Via E. de Marinis 19, Naples, Italy.

Governors Letter,Canad.D.A. Governors Letter, Canadian Dental Association. 234 St. George St., Toronto 5, Ontario, Canada.

Gyermekgyógyászat Gyermekgyógyászat Magyarország (Hungarian Pediatrics). Lenin Körút 5, Budapest 7, Hungary.

Harvard D.Alumni Bul. Harvard Dental Alumni Bulletin. 188 Longwood Ave., Boston, Mass.

Hautarzt Hautarzt, Zeitschrift für Dermatologie, Venereologie und verwandte Gebiete. Springer Verlag, Reichpietschufer 20, Berlin W. 35, Germany.

Human Biology Human Biology, a Record of Research. Wayne State University Press, Detroit 2, Mich.

Illinois D.J. Illinois Dental Journal. 632 Jefferson Bldg., Peoria 2, Ill.

Ind.Med.& Surg. Industrial Medicine and Surgery. 605 N. Michigan Ave., Chicago 11, Ill.

Indian J.M.Res. Indian Journal of Medical Research. Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Indian J.Surg. Indian Journal of Surgery. 164 Poonamallee High Rd., Madras 10, India.

Inform.dent.,Paris L'Information Dentaire. 16, Rue Vignon, Paris 9, France.

Internat.D.J. International Dental Journal. A. Sijthoff, 37 Wagenstraat, The Hague, The Netherlands.

Iowa D.J. The Iowa Dental Journal. 639 Insurance Exchange Bldg., Des Moines 9, Iowa.

Irish J.M.Sc. Irish Journal of Medical Science. Cahill & Co., Ltd., Parkgate Printing Works, Dublin, Ireland.

J.A.D.A. The Journal of the American Dental Association. 222 E. Superior St., Chicago 11, Ill.

J.A.M.A. The Journal of the American Medical Association. 535 N. Dearborn St., Chicago 10, Ill.

J.Alabama D.A. Journal of the Alabama Dental Association. 1729 Springhill Ave., Mobile, Ala.

J.Allergy Journal of Allergy. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo.

J.Am.Col.Den. Journal of the American College of Dentists. 14615 E. Jefferson Ave., Detroit 15, Mich.

J.Am.D.Soc.Anesthesiology The Journal of the American Dental Society of Anesthesiology. 93-08 Queens Blvd., Rego Park 74, N. Y.

J.Am.Pharm.A. Journal of the American Pharmaceutical Association. 2215 Constitution Ave., N. W., Washington 7, D. C.

J.California D.A.& Nevada D.Soc. Journal of the California State Dental Association and the Nevada State Dental Society. 450 Sutter St., San Francisco 8, Calif.

J.Canad.D.A. Journal of the Canadian Dental Association. 234 St. George St., Toronto 5, Ontario, Canada.

J.Colorado D.A. Journal of the Colorado State Dental Association. 724 Republic Bldg., Denver 2, Colo.

J.Connecticut D.A. Journal of the Connecticut State Dental Association. 37 Linnard Rd., West Hartford 7, Conn.

J.D.A.South Africa Journal of the Dental Association of South Africa. P. O. Box 3094, Cape Town, South Africa.

J.D.Educ. Journal of Dental Education. 344 Fourteenth St., San Francisco 3, Calif.

J.D.Med. Journal of Dental Medicine. 57 W. 57th St., New York 19, N. Y.

J.D.Res. Journal of Dental Research. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo.

J.Den.Children Journal of Dentistry for Children. 14615 E. Jefferson Ave., Detroit 15, Mich.

J.Florida M.A. Journal of the Florida Medical Association. Box 1018, Jacksonville 1, Fla.

J.Forensic Sci. Journal of Forensic Sciences. American Academy of Forensic Sciences. Callaghan & Co., 6141 N. Cicero Ave., Chicago, Ill.

J.Gerontol. Journal of Gerontology. 660 S. Kingshighway Blvd., St. Louis 10, Mo.

J.Health, Phys.Educ.& Recreat. Journal of Health, Physical Education and Recreation. 1201-16th St., N. W., Washington, D. C.

J.Hist.Med. Journal of the History of Medicine and Allied Sciences. 333 Cedar St., New Haven, Conn.

J.Histochem.Cytochem. Journal of Histochemistry and Cytochemistry. Williams & Wilkins Co., Mount Royal and Guilford Avenues, Baltimore 2, Md.

J.Indiana D.A. The Journal of the Indiana State Dental Association. 1012 Hume Mansur Bldg., Indianapolis 4, Ind.

J.Louisiana D.Soc. Journal of the Louisiana Dental Association. 407 Medical Arts Bldg., Shreveport, La.

J.Maine M.A. Journal of the Maine Medical Association. Infirmary, Brunswick, Maine.

J.Mammal. Journal of Mammalogy of the American Society of Mammalogists. 1041 New Hampshire St., Lawrence, Kan.

J.Michigan D.A. The Journal of the Michigan State Dental Association. 112 E. Allegan, Lansing, Mich.

J.Microbiol.,Epidemiol.& Immunobiol. Journal of Microbiology, Epidemiology and Immunobiology. Medghis, Petrovka 12, Moscow, U.S.S.R.

J.Missouri D.A. The Journal of the Missouri State Dental Association. 201 Merchants Bank Bldg., Jefferson City, Mo.

J.New Jersey D.Soc. The Journal of the New Jersey State Dental Society. 146 Belmont Ave., Jersey City, N. J.

J.Ohio D.A. Journal of the Ohio State Dental Association. Box A, College of Dentistry, Ohio State University, Columbus 10, Ohio.

J.Ontario D.A. Journal of the Ontario Dental Association. 234 St. George St., Toronto, Ontario, Canada.

J.Oral Surg.,Anesth.& Hosp.D.Serv. Journal of Oral Surgery, Anesthesiology and Hospital Dental Service. Formerly Journal of Oral Surgery. 222 E. Superior St., Chicago 11, Ill.

J.Osaka Univ.D.Soc. The Journal of Osaka University Dental Society. 32 Joancho, Kitaku, Osaka, Japan.

J.Pediat. Journal of Pediatrics. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo.

J.Periodont. Journal of Periodontology. 1121 W. Michigan St., Indianapolis 2, Ind.

J.Philippine D.A. Journal of the Philippine Dental Association. 631 Quezon Blvd., Manila, Philippines.

J.Pros.Den. The Journal of Prosthetic Dentistry. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo.

J.radiol.électrol. Journal de Radiologie, d'Électrologie et de Médecine Nucléaire (formerly Journal de Radiologie, d'Electrologie et Archives d'Électricité médicale). 120 Boulevard Saint-Germain, Paris 6, France.

J.School Health Journal of School Health. American School Health Association, 228 N. LaSalle St., Chicago, Ill.

J.South.California D.A. Journal of the Southern California State Dental Association. 903 Crenshaw Blvd., Los Angeles 19, Calif.

J.Wisconsin D.Soc. The Journal of the Wisconsin State Dental Society. 704 W. Wisconsin Ave., Milwaukee 3, Wis.

Kart.zahnärztl.Praxis Kartei der zahnärztlichen Praxis (discontinued). Tellus Verlag, Kibbelstrasse 9/15, Essen, Germany.

Klin.Wschr. Klinische Wochenschrift, Organ der Gesellschaft deutscher Naturforscher und Ärzte. Reichpietschufer 20, Berlin W. 35, Germany.

Lancet Lancet. 7 Adam St., Adelphi, London W. C. 2, England.

Landarzt Der Landarzt. Hippokrates Verlag, Neckarstrasse 121, Stuttgart O, Germany.

Laryngoscope The Laryngoscope. 640 South Kingshighway, St. Louis 10, Mo.

Lesestunde Die Lesestunde, Illustrierte Zeitschrift der Deutschen Buch-Gemeinschaft. Gerauer Allee 6, Darmstadt, Germany.

M.J.Australia Medical Journal of Australia. Australasian Medical Publishing Co. Ltd., Seamer St., Glebe, Sydney, N. S. W., Australia.

M.Mundi Medicamundi, Quarterly Journal on Medical Science. Eindhoven, The Netherlands.

M.Press Medical Press. 7-8 Henrietta St., London W. C. 2, England.

M.Technicians Bul. Medical Technicians Bulletin. Armed Forces Medical Publication Agency, 23rd & E Sts., N. W., Washington 25, D. C.

Massachusetts D.Soc.J. Massachusetts Dental Society Journal. 227 Commonwealth Ave., Boston 16, Mass.

Med.& Hyg. Médecine et Hygiène. 15, Boulevard des Philosophes, Geneva, Switzerland.

Med.Klin. Medizinische Klinik. Verlag Urban & Schwarzenberg, Munich 15, Germany.

Meded.med.Prodent Res. Mededelingen Medinos Prodent Research. Amersfoort, The Netherlands.

Mediarts Mediarts. 546 North Harvey St., Oak Park, Ill.

Medizinische Die Medizinische. Schloss Strasse 20, Stuttgart 1, Germany.

Mikroskopie Mikroskopie. Nikolsdorfer Gasse 11, Vienna, Austria.

Mil.Med. Military Medicine. Suite 718, New Medical Bldg., 1726 Eye St., N. W., Washington, D. C.

Minerva stomat. Minerva Stomatologica. Corso Bramante 83-85, Turin 314, Italy.

Mitt.Ges.Bek.Krebskrankh. Mitteilungsdienst der Gesellschaft zur Bekämpfung der Krebskrankheiten in Nordrhein-Westfalen. Wagnerstrasse 10, Düsseldorf, Germany.

München.med.Wschr. Münchener Medizinische Wochenschrift. Paul Heyse Strasse 26, Munich 15, Germany.

Nature Nature. Macmillan & Co., Ltd., St. Martin's St., London W. C. 2, England.

Naturwissenschaften Die Naturwissenschaften. Jennerstrasse 21, 20b Göttingen, Germany.

Nederlands Tschr.Geneesk. Nederlandsch Tijdschrift voor Geneeskunde. Frankenstraat 42, Haarlem, The Netherlands.

New England J.Med. The New England Journal of Medicine. 8 Fenway, Boston 15, Mass.

New Mexico D.J. New Mexico State Dental Journal. 113 Girard Blvd., S. E., Albuquerque, N. Mex.

New York State D.J. New York State Dental Journal. 28 Sunnyside Ave., Hempstead, N. Y.

New York Times New York Times. Times Bldg., 229 W. 43rd St., New York, N. Y.

New Zealand D.J. New Zealand Dental Journal. Lister Bldg., Victoria St. E., Auckland C. 1, New Zealand.

Nord.med. Nordisk Medicin. Sturegatan 16, Stockholm 5, Sweden.

North-West Den. North-West Dentistry. 4741 S. Fremont Ave., Minneapolis 9, Minn.

Northwest.Univ.Bul. Northwestern University Bulletin. 309 E. Chicago Ave., Chicago 11, Ill.

Nutrit.News Nutrition News. National Dairy Council, 111 N. Canal St., Chicago 8, Ill.

Odont.Chilena Odontología Chilena. Casilla 8031, Santiago, Chile.

Odont.Revy Odontologisk Revy. Stortorget 6, Lund, Sweden.

Odont.Tskr. Odontologisk Tidskrift. Erik Dahlbergsgatan 9, Göteborg C., Sweden.

Odont.uruguaya Odontologia uruguaya. Avda. Agraciada 1464, piso 13, Montevideo, Uruguay.

Odontoiatría, Madrid Odontoiatría. Jorge Juan 39, Madrid, Spain.

Oesterr.Zschr.Stomat. Österreichische Zeitschrift für Stomatologie. Frankgasse 4, Vienna, Austria.

Oesterr.Zahnärzte Ztg. Österreichische Zahnärzte-Zeitung. Weihburggasse 10-12, Vienna 1, Austria.

Oral Surg.,Oral Med.& Oral Path. Oral Surgery, Oral Medicine and Oral Pathology. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo.

ORCA Proceedings of the 4th Congress of the European Organization for Research on Fluorine and Dental Caries Prevention. Arvid Syrrist, Secretary General, Stockholm, Sweden. Royal Dental School, Malmo, Sweden.

Pakistan D.Rev. Pakistan Dental Review. 26, The Mall, Lahore, Pakistan.

Parodontol.,Zürich Parodontologie. Imprimerie Berichthaus, Zwingliplatz 3, Zurich, Switzerland.

Parodontopathies Les Parodontopathies, Reports and Communications of the 15th Congress of the ARPA Internationale. University of Geneva, Switzerland.

Penn D.J. Penn Dental Journal. School of Dentistry, University of Pennsylvania, 4001 Spruce St., Philadelphia 4, Pa.

Plast.& Reconstr.Surg. Plastic & Reconstructive Surgery. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, Md.

Policlin.sez.chir. Policlinico sezione chirurgia. Via Sistina 14, Rome, Italy.

Postepy Stomat. Postepy Stomatologii. Ul. Chocimska 22, Warsaw, Poland.

Pract.D.Monogr. Practical Dental Monographs. 200 E. Illinois St., Chicago 11, Ill.

Pract.otorhynolaring.,Basel Practica oto-rhino-laryngologica. Arnold Böcklin Strasse 25, Basel, Switzerland.

Prakt.zubní lekar. Praktické zubní lékarstvi. Sokolská 31, Prague 2, Czechoslovakia.

Presse méd. La Presse Médicale. Masson & Cie., 120 Boulevard Saint-Germain, Paris 6, France.

Probl.Oncol.,Leningrad Problems of Oncology. Institute of Oncology of the Academy of Medical Sciences of the USSR, Leningrad, USSR.

Proc.Inst.Med.Chicago Proceedings of the Institute of Medicine of Chicago. 86 E. Randolph St., Chicago 1, Ill.

Proc.Mayo Clin. Proceedings of the Staff Meetings of the Mayo Clinic. Rochester, Minn.

Proc.Roy.Soc.Med. Proceedings of the Royal Society of Medicine. 1 Wimpole St., London W. 1, England.

Proc.Soc.Exper.Biol.& Med. Proceedings of the Society for Experimental Biology and Medicine. 104 Liberty St., Utica, N. Y.

Pub.Health Rep. Public Health Reports. Public Health Service, Health, Education, and Welfare Bldg., Washington 25, D. C.

Punjab M.J. Punjab Medical Journal. Sodal Rd., Lullundur City, Punjab, India.

Quintessenz Die Quintessenz der zahnärztlichen Literatur. Stallupöner Allee 18, Berlin-Charlottenburg, Germany.

Radiol.med.,Torino Radiologia medica. Corso Bramante 83, Turin, Italy.

Radiology Radiology. 713 East Genesee St., Syracuse 2, N. Y.

Rass.internaz.clin.ter. Rassegna internazionale di clinica e terapia. Via S. Sebastiano 65, Naples, Italy.

Report Swedish Royal M. Board Report of the Swedish Royal Medical Board. Holländergatan 17, Stockholm, Sweden.

Rev.A.odont.,Argentina Revista de la Asociación Odontológica Argentina. Junin 959, Buenos Aires, Argentina.

Rev.belge stomat. Revue Belge de Stomatologie. 8 Place Foch, Louvain, Belgium.

Rev.brasil.odont. Revista brasileira de odontologia. Avda. 13 de Maio, Cong. 1001-2, salas 1-6, Rio de Janeiro, Brazil.

Rev.Círculo odont.Santafesino Revista del Círculo Odontologico Santafesino. Catamarca 2467, Santa Fé, Argentina.

Rev.Czechoslov.Med. Review of Czechoslovak Medicine, Journal of the Czechoslovak Medical Association. Malostranské Nám. Čis. 28, Prague 2, Czechoslovakia.

Rev.dent.Chile Revista Dental de Chile. Casilla 2575, Santiago de Chile, Chile.

Rev.dent.,El Salvador Revista dental. 5 Avenida Sur No. 4, San Salvador, El Salvador.

Rev.dent.,Puerto Rico Revista dental. Box 185, Yauco, Puerto Rico.

Rev.estomat.,Cuba Revista estomatoligica de Cuba. Calle L No. 353, Vedado, Habana, Cuba.

Rev.Fed.odont.Colombiana Revista de la Federacion Odontológica Colombiana. Calle 16, 7-91 Of. 4, Bogota, Colombia.

Rev.hosp.clin.,São Paulo Revista do Hospital das clinicas de Faculdade de medicina da Universidade de São Paulo. Hospital das Clinicas, São Paulo, Brazil.

Rev.mens.suisse odont. Revue mensuelle suisse d'Odontologie. Buchdruckerei Berichthaus, Zurich, Switzerland.

Rev.odont.Concepción. Revista odontologica de Concepción. O'Higgins 476, Concepción, Chile.

Rev.odontostomat. Revue d'Odonto-Stomatologie. Institut d'Odonto-Stomatologie, 16-20 Cours de la Marne, Bordeaux, France.

Rev.stomat.,Paris Revue de Stomatologie. Librairie Masson & Cie., 120, Boulevard Saint-Germain, Paris 6, France.

Ric.ital.Stomat. Rivista Italiana di Stomatologia. Calle Ballotte 4866, Venice, Italy.

Sc.med.ital. Scientia Medica Italica. Via Brenta 13, Rome, Italy.

School D.Serv.Gaz.,New Zealand School Dental Service Gazette. Wellington, New Zealand.

Science Science. 1515 Massachusetts Ave., N. W., Washington 5, D. C.

Science Digest Science Digest. 200 E. Ontario St., Chicago 11, Ill.

Schweiz.Mschr.Zahnhk. Schweizerische Monatsschrift für Zahnheilkunde. Buchdruckerei Berichthaus, Zurich, Switzerland.

South African M.J. South African Medical Journal. P. O. Box 643, Cape Town, South Africa.

SSO Bulletin für Standesfragen, Schweizerische Zahnärzte Gesellschaft (SSO). Berichthaus, Zurich, Switzerland.

Stoma Stoma, Zeitschrift für die wissenschaftliche Zahn-, Mund- und Kieferheilkunde. Wilckenstrasse 3, Heidelberg, Germany.

Stomat.,Bucharest Stomatologia. Strada Progresului 8, Bucharest, Romania.

Stomat.,Moscow Stomatologiia. Medghis, Petrovka 12, Moscow, U.S.S.R.

Stomat.,Sofia Stomatologija. Nauka i Izkustvo 5, Sofia, Bulgaria.

Suomen hammaslääk.toim. Suomen Hammaslääkäriseuran Toimituksia. Bulevardi 30 B., Helsinki, Finland.

Surg.Clin.N.Am. Surgical Clinics of North America. W. B. Saunders Co., 218 W. Washington Sq., Philadelphia 5, Pa.

Surg.Gynec.& Obst. Surgery, Gynecology and Obstetrics. Franklin H. Martin Memorial Foundation, 54 E. Erie St., Chicago 11, Ill.

Surgery Surgery. 3207 Washington Blvd., St. Louis 3, Mo.

Svensk.tandläk.Tskr. Svensk Tandläkare-Tidskrift. Skeppsbron 44, Stockholm, Sweden.

Tandlaegebl. Tandlaegebladet. Osterbrogade 4, Copenhagen, Denmark.

Today's Health Today's Health. American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

Tr.& Stud.,Col.Physicians,Philadelphia Transactions and Studies of the College of Physicians of Philadelphia. 19 S. 22nd St., Philadelphia 3, Pa.

Tr.European Orthodont.Soc. Transactions of the European Orthodontic Society. D. P. Walther, Secretary, Royal Dental Hospital, Leicester Sq., London W.C.2, England.

Tr.Roy.School Den. Transactions of the Royal Schools of Dentistry. Umeå Research Library, Umeå, Sweden.

Tribuna odont.,Buenos Aires Tribuna odontológica. Casilla de Correos 2047, Buenos Aires, Argentina.

Tschr.tandheelk. Tijdschrift voor Tandheelkunde. Jutfaseweg 1, Utrecht, The Netherlands.

Tskr.norske laegefor. Tidsskrift for den Norske Laegeforening. Inkognitogt 26 ii, Osla, Norway.

U.S.Armed Forces M.J. U.S.Armed Forces Medical Journal. 23rd & E Sts., N. W., Washington 25, D. C.

Ugeskr.laeg. Ugeskrift for Laeger, Almindelige Danske Laegeforening, Kristianiagade 12, Copenhagen O, Denmark.

Umschau Die Umschau in Wissenschaft und Technik. Umschau Verlag, Frankfurt/Main, Germany.

Virginia M.Month. Virginia Medical Monthly. Medical Society of Virginia, Richmond 12, Va.

Washington Post Washington Post. 1515 L St., N.W., Washington, D.C.

Welfare Bul. The Welfare Bulletin. Official publication of the Illinois Department of Public Health. 400 South Spring St., Springfield, Ill.

Weltwoche Die Weltwoche, unabhängige schweizerische Umschau, Talacker 41, Zurich, Switzerland.

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